



The Macrolepidoptera of the World

===== A systematic description =====
of the hitherto known Macrolepidoptera

edited in collaboration with well-known specialists

by

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STUTTGART

Alfred Kern

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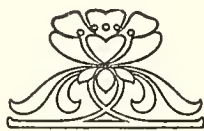
===== II. Division: =====

The Macrolepidoptera

of the

American Region

7. Volume: **Noctuiiformes.**



Introductory.

As more minutely stated in the introduction to the *Agaristidae* (p. 2), and since there is only an incidental and secondary deviation to be seen in the claviform antennae of the Agaristids (in opposition to the non-claviform antennae of the Noctuids), a closer connection of these two groups has been brought about. We behold in their unification under the name of **Noctuiformes** the expression of a natural homogeneousness, quite as similar as the unification of certain families into primary groups (Acraeae, Heliconiae and Nymphalidae into *Acraeomorphae*; Satyridae, Morphidae, Brassolidae into *Satyromorphae* etc.), an indication of a scientifically founded relationship. In contrast to this the question, to which of these divisional parts is to be attributed the value of a separation of families, and to which that of a separation of sub-families, seems to us to be of minor significance than that in which place the line of demarcation between Agaristids and Noctuids is to be put.

A separation from the Noctuids seems not to be unnatural, if the ancient conception of the group of Agaristids is considered, in so far as the strict character of a split into two families, having the same value, as for instance that between Geometrids and Sphingids or Pyralids etc., is to be applied to them. We have therefore also here remained true to the ancient conception to be found in the treatise of the Indian Agaristids by K. JORDAN (February 1912) which appeared quite simultaneously with STRAND's Catalogue.

As to the American Agaristids, a glance on plate 1 is of convincing proof that they are considerably inferior to the Indo-Australian and Ethiopian species as to size and magnificence. We are vainly looking for a substitute in America for the marvellous *Agarista* in Australia and *Eusemia* in India as well as for the *Xanthospiloptyx* in Africa. The western representatives of this group are distinguished by a bright, but more twofold colouring, though sometimes interspersed with minute metallic traces. Black with yellow or white spots, but rarely with metallic transfusion, such is the type of colours in which nearly all the American *Agaristidae* agree.

As we have seen in Australia in the *Phalaenoides* (Vol. 11, t. 29) depredators to the vine, we likewise find in America some species such as *Eudryas unio*, *E. grata*, the species of the genus *Alypia*, limited either wholly or partly to the vine as food-plant. The few larvae, too, which we know from the genera *Eusemia*, *Scrobiger* etc., either feed on Ampelideae or such plants as the vine-larvae are partial to, as for instance *Oenotheraeae*. Thus, for instance, *Comocrus behri* lives on Loranthus, *Scrobig. proxima* and *Ophthalmis milete* on Cissus, *Phalaenoides tristifica* on Epilobium and *Oenothera*, which otherwise are infested by Sphingid larvae and their congeners, and even the *Agarista*-larva itself was found on the vine, so that we may assume the family of plants of the Ampelideae to be the most natural food-plant for the Agaristid larvae.

On the other hand we find among the *Noctuidae* only quite exceptionally lovers of the vine, what is the more wonderful for we know the multitudinous host of the Noctuids to be devotees to well-nigh every plant we know. Some Noctuids are polyphagous, but the majority of them contrariwise very squeamish and frequently so devoted to but one species of plants, that even the closest allies of the food-plant cannot be substituted for them. We often find the Noctuid-larva an exact prototype of the feeding herb; the European *Cucullia artemisiae* precisely represents an Artemisia-twigg studded with minute knobs. *Cuc. verbasci*-larvae only take to Verbascum, while those of *Cuc. scrophulariae* only are fond of Scrophularia and not vice-versa. On a comparison of the Noctuid fauna of the Ancient World with that of America, we get an impression that on both hemispheres the places in the household of Nature occupied by the Noctuids are also possessed by the parallel forms of this family. RADCLIFFE GROTE has made a special research between the relations of the paleo-arctic to the American Noctuid fauna and has ascertained that while among the *Sphingidae* there are only 2 and among the *Bombyces* only very few (partly smuggled in) species common to Europe and America, the Noctuids contain many species partly common to both hemispheres and partly represented by geographical parallel forms.

Both relatively and absolutely America abounds much more in Noctuids than any part of the Ancient World. In order to give us an idea of the gigantic number of the species of Noctuids of America, we may state the following comparisons. In the United States alone there are more Noctuid species than in the whole palearctic part of the Ancient World, as comprehended by STAUDINGER in his catalogue, i. e. in the whole of Europe, the greatest part of Asia and Northern Africa. While but altogether 500 Noctuids are known from the best explored district of the eastern Tropics, i. e. the Island of Ceylon, therefore little more than 100 species more than those found in a district of Central Europe of the same size, the number in the American Tropics increases astonishingly. But these parts of the continent are still so imperfectly explored as to their Noctuid fauna that even approximate calculations are not yet possible to-day. The enormous territory of the interior of Brazil, of Peru, Bolivia, Guiana, the south of Venezuela and Colombia have been so little explored as to their abundance of Noctuids, that we may truly say our knowledge extends only to fractional parts of the actual amount of them. We may therefore assume that in America alone there are to be found as many species of Noctuids as there are in the rest of the world.

Moreover the fauna of the Noctuids varies altogether according to the latitudes. In the extreme north we find the holarctic polar fauna in its well-known scarcity. In the more southern parts of Canada, however, at a latitude on which the Central German faunistic character begins to show itself, and where in Eastern Asia (for instance in Sachalin or in South Kamtchatka) only quite inferior representatives of the family of Noctuids are to be found, there is an abundance in America as no district in Europe attains to, or is but rarely encountered in Tropical India. The Central States of the United States, Central Germany and Northern Japan show a similarity to one another as to the climate, and yet we find for instance of the genus *Catocala* on the Middle Rhine 8, in Northern Japan 16, but in each of the North American Central States about 50 to 100 forms. Of the Noctuids of the *Plusia*-group the United States can prove to have more than 3 times as many species as that shown by the large tropical Island of Ceylon.

Just as the Noctuids in America show the greatest number of species, they also attain to the largest size there. *Thysania agrippina* (*Erebus strix*) attains at nearly $\frac{1}{4}$ of a meter the greatest span of all lepidoptera and of almost all the insects. The females of *Erebus odora* resemble on the wing large bats; they reach a span of 15 cm, and the *Thysania zenobia* common to Venezuela does not fall short very much of these gigantic creatures. The flying-power of these lepidoptera must be quite an extraordinary one, for the *Erebus odora* sometimes came flying close to ships which were no more far distant from the European coast, and once one specimen was found in Tristan d'Acunha, which is situate nearly midway between Montevideo and Cape Town. These insects must therefore be able to traverse on the wing immense oceans.

It goes without saying that by reason of the great multifariousness of the American Noctuids not much can be said of their appearance that would be common to them. The earthy grey species to which belong so many European *Euxoa*, *Athetis*, *Mamestra* etc. also take the leading part in the northern districts. The closer to the Equator, the more they are varied by bright coloured or dark ribbed species, just as they come up in the character of coloration to the eastern *Grammesia* and *Parallelia*. Particularly in the deep crevices of the so-called Canyons of the Mexican table land, and such as are crossed by the higher situated Llanos of Venezuela, numerous numbers of the genus *Melipotis* are to be found replacing the eastern *Cerocala*, *Achaea*, *Palpangula*, *Grammodes* etc. In the tropical forest district, especially in Central and South America the *Zale* and *Safia* (*Homoptera*) are predominant, which with flat (instead of roof-like) wings, showing the anal half of the hindwing, are perched on planks, trunks of trees and stones. They combine with an almost monotonous brown colouring a marking closely reminding us of our *Boarmia*. Furthermore in tropical America a great number of Noctuid-species make their appearance in the evening, the abode of which in day-time can barely be determined, as they are very rarely roused from the brushwood or are to be seen reposing on a rock or tree. These, for instance, are the *Acanthodica* exactly resembling a splinter of wood, the *Calymniodes* corresponding to the European *Calymnia* and the somewhat *Agrotis*-like *Namangana*. South of the tropical wooded belt we find again resting in the grass of the Pampas small but finely coloured *Tarache* and variegated forms of the otherwise sombre coloured *Monodes*. Trunks and particularly the plankings of barbed wire with which the pasturages of Argentina are fenced in are sometimes beset with *Laphygma*, and it happens that the last mentioned Noctuid-species are swept down by the „Pampero“ (the gale blowing over the Pampas), carried far away and set down in the streets of Buenos Ayres and Montevideo, where in unison with other insects taken hold of by the wind they may form a living cover of the pavement.

The palped Noctuids from among the group of the Deltoids, showing particularly in the Tropics a rich development of forms with frequently singular patterns of colouring and highly peculiar deviations in the shape of the palps, wings and legs, are spread over the American countries of every clime.

We thus come to the conclusion that America is the most important continent to the development of the tribe of Noctuids.

1. Family: Agaristidae.

The Agaristids we have limited also in this volume in the same sense and taken up to the same extent as in volume 3, 11 and 15, therefore a little more extensively than has been done by HAMPSON with his Agaristidae proper, and we have included therein the Indo-Australian *Seudya* and the kindred homologous genera *Gerra*, *Gerrodes* with their allied genera, which are already put forth from the great tribe of Acronyctinae in HAMPSON's conception, who has classified them there. So as not to disarrange the homogeneousness of the work we thought fit to assign a wider scope to the family which, as stated in the earlier volumes, can only claim the value of a subfamily which STRAND wants to attribute to it of late. We cannot coincide with his elucidations, nor can they bear a scientifically strict comment, such as the Agaristidae can. The latter, if one is allowed to say so, have more or less become an habitual group in the circle of the forms of *Noctuidae* composed of diurnal and in most cases variegated animals with a tinge of the *Arctiidae*, mostly distally thickened antennae and slighter bodies than is commonly attributed to the Noctuids. If the group is taken like this, it will allow itself to be proportionally sharply circumscribed. But if we make concessions to transition forms, the entire character of the group is lost as is to be seen in STRAND's catalogue, and a whole series of genera, which are surely neither biologically nor systematically allied to them, are torn out of their better suitable association. Nobody will satisfactorily assent to recognize *Agaristidae* in the green *Agriopodes*, the little *Acronyctinae* resembling the *Nonagria* so closely, or the American *Erastria*-like small Noctuids. Thus a jumble of little uniform shape is made up with still less common peculiarities, which would permit to segregate them from the *Noctuae*.

As already mentioned in the General Introduction to this volume, the American *Agaristidae* differ materially from their most dazzlingly variegated allies of the Ancient World and Australia by usually more dull, brown or black tones. Bluish silvery metal scales are to be found almost everywhere and frequently yellow hindwings margined with black are the only colourings on the insect. Biologically very little is known. Some species are evidently a modification of the Pericopids or of the innumerable black and yellow Geometrids of South America. They mostly seem easily to be scared up in day-time not to be lovers of the sunlight. Nearly all species, however, are caught at night on the wing under the lamp.

Of the larvae only a few of the smaller North American *Alypia*-species are known. They are naked with a somewhat raised 11th ring and a few sparse hairs on little warts; head and anal shield mostly ruddy-yellow. The pupation takes place in the glutinous earthen housing. As food-plant the vine also ranks foremost in America.

1. Genus: *Copidryas* Grt.

The chief (characteristic mark of this genus consists in a large, flat, tridented, above hollowed, horny projection of the frons, surmounting somewhat the rough-haired, porrect palpi; the scarcely thickened antennae are plain. The tibiae show a cover of long hair, no spines. The dorsum of the first abdominal ring exhibits a hair-tuft. The neurulation is rather uniform in all these genera and shows few differences: the upper median and the two lower radial veins of the forewing rise rather close together from the lower cell-angle, the upper radial vein from the upper cell-angle; an accessory cell is present. On the hindwing the middle radial vein is feebly developed and comes from the middle of the transverse vein. In all the genera taken into consideration the costal vein of the hindwing rises separately, but close behind the base it is united with the subcostal, in order to leave it again immediately and to terminate into the costal margin.

C. gloveri Gr. & R. (1 a) is a brown insect with a broad, white longitudinal band filling up the cell *gloveri*. and terminating obliquely upwards before the apex into the costal margin, the two cell-maculae being surrounded by dark in the brownish costal margin. Hindwing yellow with a black marginal band and white fringes. Abdomen

yellow, dorsal and anal tuft black. The 2nd palpal joint, the frontal sides and the underside of the tridented, black frontal projection are white. The species was described from the United States (Arizona), but I received it also from Mexico (S. Luis Potosi).

cosyra. **C. cosyra** Drc. (1 a) is of the size of the preceding, the pattern of the colouring being similar, too; the forewing, however, is in the marginal and inner-marginal part light grey, instead of dark brown; the white longitudinal stripe runs more uniformly bent and at the margin there is a marginal line bordered with black in front of the lighter fringes. The hindwing is the same, chrome-yellow with a broad, blackish marginal band in which a fine, yellow undulate line extends close in front of the margin. Western Mexico.

peruviana. **C. peruviana** Drc., having remained unknown to me, is described to be brown, densely intermixed with grey hair on the body; abdomen yellow with a black basal hair-tuft. The light brown forewing shows dense, white and greenish dusting, two black postmedian zigzag-shaped transverse lines and in the cell a small brown spot; proximal margin brown, fringes speckled white. The hindwing is yellow with a black marginal band and grey-speckled fringes. The ♀ is somewhat darker. Expanse of wings: 52 mm. South East Peru, at an altitude of 6000 ft.

2. Genus: **Euschiropterus** Grt.

This small genus is particularly interesting for its very conspicuous sexual dimorphism, although both sexes are not known hitherto of all the species; in the ♂♂ the costal margin of the forewing is bulged out before the apex. The neurulation is as in the other genera, but the upper radial on the forewing rises from the accessory cell, not from the upper cell-angle. The frontal projection is of a plain conic shape, the antennae particularly in the ♂♂ are very much thickened before the apex, the tarsi very much haired and with bristly spines.

valkeri. **E. valkeri** Hmps. (1 b) is a smaller, chocolate-brown species very much haired and dusted greyish-white, with a white discal longitudinal stripe on the forewing; maculae dark; a dark postmedian transverse line extends to the proximal margin. Abdomen and hindwing yellow, the hindwing with a broad black marginal band and a yellow spot in it at the anal angle. Chile.

poeyi. **E. poeyi** Grt. (= *disparilis* H.-Schäff., *argentata* Drc.) (1 a) resembles *valkeri* in the ♀, though it is by far larger; in the ♂ the greater part of the wings is hyaline diaphanous, only in the inner-marginal half of the forewing there is brown colour and marking. Distributed from Mexico to Guatemala, also in Cuba, Jamaica and Hayti.

discifera. **E. discifera** Hmps. (1 a) is closely allied to *poeyi*, but the disc of the forewing is yellow instead of white, the cell-spot round, not oblique, and the marginal band of the hindwing is much broader. Described from Brazil (Sa. Catharina).

klagesi. **E. klagesi** Jord. (1 e) is much smaller than *discifera*, with narrower wings and a much narrower marginal band of the hindwing, also paler colouring. Distributed from the Orinoco to Tucuman. — In the typical form the head is above purely white, the white area of the forewing extends to the base of the costal margin, the hindwing is of a very pale yellowish colour. Bolivar, in July. — The form **tucumana** Jord. is darker on its head and thorax, with broader wings. The white area of the forewing does not extend so far towards the base and is shaded with brown here, the hindwing of a deeper yellow with a broader marginal band. — **fuscus** Jord. has quite brown-dusted forewings, so that there only remain faint traces of the white colour. Tucuman (Argentina).

3. Genus: **Tuerta** Wkr.

Distinguished from the preceding genus by the posterior tarsi not being haired, and by the upper radial vein of the forewing rising from the upper cell-angle. The coniform frontal projection is in *platensis* extended to a point, not so in the other species. The sexes are not differently built and coloured. The abdomen has above rather long tufts.

platensis. **T. platensis** Berg (1 b) looks almost exactly like *E. poeyi*-♀, but it is much smaller and originates from Argentina. — **bolivar** Jord. from the Orinoco District (Bolivar, June) has a prolonged cell-spot of the forewing and a less prominently black dorsal line on the abdomen. In Uruguay (typical) *platensis* flies in January and February.

insulica. **T. insulica** Hmps. from Trinidad has a red-brown anterior body interspersed with white, the frons being white; abdomen yellow with brown dorsal tufts. The white forewing is densely dusted with red-brown except the area between and behind the maculae being pupilled silvery; an indistinct, red, oblique, antemedian transverse line; in the darker marginal area there are small spots dentated dark, intermixed with silvery scales, and a whitish border towards the margin. Hindwing yellow with a brown marginal band and white fringes. Expanse of wings: 36 mm.

hemicycla. **T. hemicycla** Hmps. is somewhat similar, much smaller; the ground of the forewing is more olive, not white; the ring-shaped macula is bordered by a white semi-circle forming at the same time the interior margin of the reniform macula, the latter being outside bordered by an oblique white band; on the middle of the proximal margin there is a double red line inwardly scaled silvery;

instead of the small dark marginal spots there is only a fine line; fringes speckled white. Hindwing light reddish, at the margin dark red. From the Bahamas (Abaco). Expanse of wings: 30 mm.

T. lycaon *Drc.* (1 d) likewise belongs near to the preceding and is easily recognizable by the white *lycaon*. basal spot of the forewing; the ring-macula is surrounded by a large U-shaped spot; the hindwing is light yellow, broadly bordered with a rust-brown tint. Head and collar white; thorax reddish-brown, abdomen yellow with black dorsal tufts. This species originates from Ecuador (Sarayacu) and has an expanse of wings of 29 mm.

T. sabulosa *Fldr.* (= *seversa* *Grt.*, *noctuiiformis* *Mschlr.*) (1 b) is a very variable species, whitish, densely *sabulosa*. dusted with grey, with 2 somewhat dentate transverse stripes and darker maculae. Abdomen and hindwing yellow, the latter with a black marginal area. By a reduction of the grey scales the whole discal area may turn white; I denominate this form: **albidisca** *form. nov.* (1 a), or only a spot behind the reniform macula: **albiplaga** *albidisca*. *form. nov.* (1 a). In the two latter forms also the thorax and the basal area of the forewing grows more or less *albiplaga*. white. From Mexico and Guatemala, known also from Porto Rico.

4. Genus: **Pseudalypia** *H. Edw.*

Distinguished from the following genus *Alypia* chiefly by the long, triangular, laterally knobbed frontal projection. The short palpi show in front, the tibiae are only scaled. No difference in the neuration. Only 2 species from North America were described.

P. crotchi *H.-Edw.* (5 a) is black with a brownish reflection; base of palpi, collar and anal tuft are *crotchi*. orange. The forewing shows a narrow, yellowish-white transverse band ending pointed at the proximal margin; as far as to it the costal margin is of the same colour; fringes of the hindwing and of the apex of the forewing white. — In the form **atrata** *H. Edw.* the transverse band is absent. The species was described from *atrata*. California. Expanse of wings: 26 mm.

P. geronimo *Barnes* from Arizona has the transverse band parted into 2 quadrangular spots at *geronimo*. the apical third of the costal margin and near the posterior angle; the former shows inside silvery blue scales, and partly also the veins; the collar, palpi and anus are black, the hairing of the legs, however, and a hair-tuft beneath at the base of the wings are orange. Flying in July and August.

5. Genus: **Alypia** *Hbn.*

Not quite a dozen of small, black, rather similar species decorated with yellowish spots and silvery blue scales. They are distinguished by their squat, strong structure, and have very long-haired, ascending palpi; also the tibiae and base of abdomen are covered with long and coarse hair. Thereby and by the plainly coniform frontal projection they are distinguished from the preceding genus. The neuration does not show any difference except the upper radial on the forewing rising from below the upper cell-angle. All the forms are found in North America, some descending as far as Mexico.

A. mac-cullochi *Kirby* (1 b). In the ♂ the forewing is expanded from the base to behind the middle *mac-cul-* and shows beneath a deepened, transversely ribbed, narrow, skinny stripe. The forewing shows 3 yellow spots, *lochi*. the hindwing two white spots. Spots on the collar, stripes on the shoulder-covers and small dorsal spots are yellow, the anterior and middle tibiae are orange. — The form **lorquinii** *Grt. & R.* has an elliptic spot instead *lorquinii*. of the bent postmedian band. — In **similis** *Stretch* the spots of the hindwings are also yellow, those in ab. **con-** *similis*. *juncta* *H. Edw.* more or less confluent. Canada, California. Expanse of wings: ♂ 30, ♀ 36 mm. *conjuncta*.

A. disparata *H. Edw.* (= *gracilentia* *Graef*, *desperata* *Ky.*) (1 b). The bare, ribbed stripe described *disparata*. in the ♂ of the preceding species is here only present in the distal half of the costal margin; the forewing is much more stretched and only shows 2 yellow spots. Widely distributed from the United States to Mexico.

A. brannani *Stretch* is very much like *disparata* in all its parts, but somewhat smaller, and the *brannani*. spots of the forewings are white instead of yellow. California. Expanse of wings: 34 mm.

A. octomaculata *F.* (= *bimaculata* *Gmel.*, *quadrigitallis* *Hbn.*) (1 b) is almost exactly coloured and *octomacu-* marked like *disparata*, but it has much shorter and broader wings, and the ♂ is without the secondary distinction *lata*. at the costal margin as in all the following species. — **albomaculata** *Stoll* (= *matuta* *H. Edw.* has a small and *albomacu-* round white basal spot of the hindwing. — In **wittfeldi** *H. Edw.* the middle yellow spot of the forewing extends *lata*. almost to the proximal margin. Widely distributed in North America. — The larva has an orange head, neck- *wittfeldi*. shield, anal valve and dorsal bands, showing on black tubercles one long white hair each. It lives on the vine, attains its adult state in July and builds a glutinous earthen habitation in which it hibernates.

A. dipsaci *Grt.* resembles the preceding by the distribution of the spots, but the spots of the hindwings *dipsaci*. are yellow, not white, and the postmedian spot of the forewing is considerably larger. Described from California. Expanse of wings: 32 mm.

- langtoni*. **A. langtoni** *Coup.* (= *sacramenti* *Grt.* & *R.*, *hudsonica* *H. Edw.*) (5 a) resembles *octomaculata*, but the white basal spot of the hindwing is absent, only the distal spot being present. Widely distributed in North America. Expanse of wings: ♂ 34, ♀ 36 mm.
- mariposa*. **A. mariposa** *Grt.* & *R.* (5 a) on the forewing somewhat resembles *maccullochi*, but the postmedian band is divided into 2 small spots, also on the hindwing, whilst here the basal spot is absent. The shoulder-covers are quite black and only the middle tibiae orange. — **A. lunata** *Stretch* by the confluence of the separated small spots exhibits crescentiform postmedian bands on both wings, on the hindwing also the basal spot is present. Expanse of wings: 38 mm. The species is found in California. — The young larva is amber-coloured, later on reddish-white with white dorsal and lateral stripes and between them with very irregular darker markings. It lives on *Clarkia elegans*.
- ridingsi*. **A. ridingsi** *Grt.* (5 a) resembles the preceding form *lunata*, but on both wings the yellow postmedian spots are sharply traversed by the black veins, and it is smaller besides. Expanse of wings: ♂ 32, ♀ 34 mm. From the United States and California.

6. Genus: **Alypiodes** *Grt.*

Like the preceding genus, but the tibiae are not long-haired, but smoothly scaled like the abdomen. The antennae are not so very much thickened. The neuration is the same. Only 3 species are described.

- bimaculata*. **A. bimaculata** *H.-Schäff.* (= *trimaculata* *Bsd.*) (5 a) is a larger, black species with 3 yellowish-white spots on the forewing and small, bluish silvery scaled stripes between them; in the type the hindwing is black, in **A. crescens** *Wkr.* (= *grotei* *Bsd.*, *flavilinguis* *Grt.*) it shows a postcellular spot, and in **A. dugesi** *Cock.* (1 c as *bimaculata*) another one near the proximal margin. From the United States to Mexico.
- radians*. **A. radians** *Bsd.* (1 c) has instead of the basal spot on the forewing veins striped yellowish-white, the discal spot being very small, and from the postmedian band there proceed likewise vein-stripes towards the margin. Mexico.
- walkeri*. **A. walkeri** *Drc.* (= *stuarti* *Schs.*) (1 b) somewhat resembles *radians*, but it exhibits a very narrow, bent postmedian band without vein-stripes behind it. The collar is black, the shoulders exhibit small orange hair-spots. Known from Mexico and Guatemala.

7. Genus: **Darceta** *H.-Schäff.*

This genus, better known by the name of *Diamuna* *Walker*, contains several rather large, strong species with a somewhat ensiform apex of the forewing. The 3rd joint of the roughly scaled, obliquely rising palpi is short; the frons as usually shows a coniform projection; the tibiae are exceedingly long and densely haired. In the neuration there is no difference from the other genera. The males which are rather smaller than the ♀♀, in the 2 first species exhibit very peculiar sexual distinctions.

- falcata*. **D. falcata** *Drc.* (1 b) in the male shows at the costal margin in the middle a membranous, radiantly ribbed groove, which is in front bordered by the almost bossily thickened and inverted costal margin; behind it the costal margin is concavely excised, somewhat stunted. The forewing is chocolate-brown with double darker transverse lines and the veins partly marked silvery blue. Abdomen and hindwing orange-yellow, the latter with a broad, dark brown marginal band. The ♀ is considerably larger. Described from Panama, before me from the Coll. FASSL also from Colombia from the Upper Rio Negro.
- haenschi*. **D. haenschi** *Dohrn*, described only according to 2 ♂♂, is very much like the preceding, but the hindwing is quite dark brown with only a small round orange spot in the middle and a yellow proximal margin, the anal angle is more produced. Described from West Ecuador.
- primulina*. **D. primulina** *Drc.* (1 c) has yellowish-brown, towards the margin more greyish-brown forewings with 2 indistinct antemedian and antemarginal transverse lines. Hindwing orange with a broad brown marginal band. Abdomen above blackish-brown, beneath orange. Only the ♀ is known, described from Mexico. Expanse of wings: 42 mm.
- severa*. **D. severa** *Cr.* (1 c) is a large species, the anterior body and forewings being of a reddish brown, with a black abdomen and orange-yellow hindwings margined with black. The forewing shows in the basal part of the proximal margin a darker velvety-brown triangular spot and a triple curved, postmedian transverse line. Most extensively distributed from Mexico to Surinam, Colombia, Bolivia and the Amazon District.
- hesperina*. **D. hesperina** *H.-Schäff.* (5 a) is very similar, on the forewings lighter, of a more olive tint, and on the hindwing the black marginal band broadly borders on the proximal margin, and in the ♂ having hitherto not been described it even projects somewhat into the cell. Bolivia (Rio Songo) and Brazil (Sa. Catharina).
- proserpina*. **D. proserpina** *Cr.* (1 c) is likewise similar, but much darker, the abdomen bluish-black. The forewing is much more distinctly marked, in the marginal area of a lighter violettish-grey; on the hindwing the black

of the proximal margin in both sexes flows together with the costal margin through the basal area, so that there only remains a round, orange discal spot. From Colombia, Surinam and Brazil.

D. ophideres *spec. nov.* (5 f) is at once discernible from the other allies by its quite yellow hindwings *ophideres*. and abdomen. Forewing chocolate-brown, in the proximal half darker, strewn with silvery blue scales forming a fine longitudinal stripe above the submedian fold and crossing the cell-end as an indistinct, lighter, violettish lustrous longitudinal band as far as the posterior transverse stripe. Besides there are two darker cell-maculae to be seen, the reniform macula parted by a narrow silvery stripe. The posterior transverse line is somewhat lighter, undulate and on both sides bordered by a darker tint. Described according to a ♀ from Orosi (Costa Rica).

8. Genus: **Schalifrontia** *Hmps.*

Well distinguished by the frontal cone of the shape of a trilateral pyramid, its apex ending into a small fork. The second palpal joint is long-haired, the terminal joint short, bare. Tibiae smoothly scaled. The veins vary little: on the forewing the upper radial vein rises below the upper cell-angle, on the hindwing the upper median vein before the lower cell-angle. The only species known hitherto has haired eyes.

S. furcifer *Hmps.* (1 e) is black; the forewing exhibits in the basal part a longitudinal band, in the *furcifer*. distal part an oblique band of an orange-yellow colour. Hindwing orange with a black costal margin and border extending in the submedian space with a long tooth almost to the base. Collar spotted orange, abdomen laterally and beneath striped. From Brazil (Sa. Catharina).

9. Genus: **Parothria** *Hmps.*

This genus contains the only American species that has no accessory cell on the forewing; here all the 4 lower subcostal veins rise on a long footstalk; the palpi and posterior tibiae are long-haired; the frontal projection is coniform.

P. ecuadorina *Ww.* (1 c) greatly resembles the species of *Seirocastnia* from which it is separated *ecuadorina*. by the black abdomen. Described from Ecuador.

10. Genus: **Orthia** *H.-Schäff.*

Similar to the preceding genus, but with shorter, broader wings; the forewing has a small accessory cell, otherwise the veins are the same. The tibiae, the dorsum of the 1st abdominal ring and the short 3rd palpal joint are roughly haired. The antennae are strongly thickened towards the tips. Only 1 species is known.

O. augias *H.-Schäff.* (= *lethe* *Fldr.*, *amazonica* *Ww.*) (1 d). A large, blackish-brown species with *augias*. an oblique orange band on the somewhat bluish lustrous forewing. Anterior hips and femora laterally orange. — In the form **nexa** *Bsd.* the oblique band is of a pale yellow and the costal margin beneath sealed grey. — *nexa*. Widely distributed in Colombia, Bolivia, Peru, and the Amazon District.

11. Genus: **Seirocastnia** *Grt.*

Distinguished from the preceding genus by much less thickened antennae; the frontal projection is much smaller and is covered by hair-tufts. On the forewing the uppermost radial vein comes from the upper cell-angle. Otherwise all is as in *Orthia*, but the wings are longer and more extended. A small number of rather similar, black and yellow species from Central and South America is known hitherto.

S. amalthea *Dalm.* has a black forewing with a triangular basal spot and a postmedian oblique *amalthea*. band of an orange-yellow colour, the hindwing being orange with a black marginal band. Abdomen likewise orange with black dorsal and lateral lines and a black apex; collar in front orange, like the chest and legs. — In the typical form the basal spot is small, in **separata** *Wkr.* reduced to a punctiform spot, and in **lindigii** *Fldr.* *separata*. (1 d), which is often also considered as a separate species, very large and extends from the base to behind *lindigii*. the middle. Colombia, Ecuador.

S. panamensis *Hmps.* (= *separata* *Drc.*) (1 d) has in the male only a narrow orange oblique band *panamen-* on the forewing; in the ♀ there is besides a triangular antemedian spot; from the preceding species it differs *sis*. by the black marginal band of the hindwing extending at the proximal margin up to the base. Only known from Panama.

S. volupia *Drc.* (1 d) is exceedingly similar to *panamensis*, but it has a yellow palpal base and a *volupia*. black collar, whilst *panamensis* has quite black palpi and an anteriorly orange-yellow collar; besides the costal margin of the hindwing is yellow in the latter species, in *volupia* black. West Indies: Sa. Lucia.

- tribuna.* **S. tribuna** Hbn. (= *continua* Wkr., *schausii* H. Edw.) (1 d) is easily recognizable by the long, yellow basal spot of the forewing and the long longitudinal stripe of the hindwing. Mexico, Honduras, Guatemala, Nicaragua, besides in Hayti and Cuba.
- praefecta.* **S. praefecta** Drc. (1 e) looks very much like *panamensis* and *volupia*, and is discernible by a much broader black abdominal stripe and a broad black costal margin of the hindwing. In the nomenclatural type *elaphebolia.* the orange oblique stripe of the forewing is almost extinguished by brownish scales, in **elaphebolia** it is distinctly *nervalis.* prominent, and in ab. **nervalis** Strd. (1 d) it is much shorter, whilst there is another, smaller spot in the basal half and the yellow of the hindwing more reduced. From Ecuador, Bolivia and Peru.
- meridiana.* **S. meridiana** Schs. (1 e) differs from *elaphebolia* by the hindwing being black with a pear-shaped, orange-yellow spot leaving the costal margin broadly black as far as into the cell. From Brazil (São Paulo).
- columbina.* **S. columbina** Ww. (1 e) looks like *O. augias*, but anteriorly it has an orange-yellow collar, and a yellow spot at the palpal base. Colombia.
- extensa.* **S. extensa** Jord. Brown, collar anteriorly and abdomen yellow, the latter with a narrow dorsal line. Forewing above with a broad, yellow band being broadest at the lower cell-angle. Hindwing yellow, costal margin and distal margin edged with black as in *lindigii* Fldr. Fringes at the proximal margin likewise black. Beneath the forewing shows a large, yellow triangular spot in the basal half, the hindwing is as above. Length of wings: 28 mm. Colombia (Rio Dagua and Popayan).

12. Genus: **Phasidia** Hmps.

Palpi much longer than in the other genera, particularly the 3rd joint which is bare and shows straight forward; the long frontal projection is coniform; the antennae are very much thickened towards the tips, almost club-shaped. The tibiae are only little haired, the abdomen smoothly scaled. On the forewing the upper radial vein comes from below the upper cell-angle and the accessory cell is very minute. Only 1 species is known.

- contraria.* **P. contraria** Wkr. (= *meridionalis* Schs.) (1 e) is blackish-brown with a slight blue reflection and an oblique, pale yellow transverse band of the forewing. Brazil, Peru.

13. Genus: **Phasis** Wkr.

Distinguished from the preceding by thinner antennae, shorter palpi and a somewhat larger accessory cell of the forewing on which the upper radial vein rises from the upper cell-angle.

- noctilux.* **P. noctilux** Wkr. (= *batesi* Fldr.) (1 f as *phasis*) resembles *contraria*, but it is somewhat larger and has orange-yellow margins behind the eyes, of the same colour are the base of the palpi and lateral spots on the chest. Amazon District.

- mardava.* **P. mardava** Drc. (1 e) is blackish-brown without the blue reflection of the similar species, with a very irregularly defined, light yellow oblique band of the forewing. Amazon District.

14. Genus: **Xerociris** Cock.

With this genus we add to the Agaristids that group of *Noctuinae* which corresponds in the Indo-Australian part to the *Seudyra* and *Zalissa* and which would be better inserted in the *Acronyctinae* in HAMPSON's sense, particularly because the antennae are partly combed and not thickened. The rest of the structure, however, corresponds well. They especially are also biologically closely allied, for the larvae, as far as they are known, are externally very much like those of the Agaristids and they likewise live on the vine. The long frontal projection is of a pointed conic shape; the moderately long palpi are smoothly scaled, the shoulder-covers long-haired; the base of the abdomen exhibits a large dorsal tuft. The neurulation does not deviate, except the upper radial vein on the forewing rising from the accessory cell. Only 1 species.

- wilsoni.* **H. wilsoni** Grt. (1 f) has silvery white forewings with olive-green spots at the costal margin and proximal margin and maculae, whilst a marginal band is purple grey with a fine white marginal line. Head and thorax brown and bluish-black, shoulder-covers and abdomen white with brown dorsal tufts. Texas. — The larva with a somewhat raised anal segment is purple black with several narrow white transverse lines on each ring and red ventral spots. Head, neck and anal valve as well as the feet are red. On the thoracal rings and the last segment there are very long, flattened spatulate hairs.

15. Genus: **Euthisanotia** Hbn.

Distinguished from the preceding by its rounded frontal projection with a horny plate below it; ♂ antennae ciliated; the anterior tibiae show outside very long hair-tufts; on the forewing the upper radial vein comes from the upper cell-angle.

E. sancti-johannis Steph. (= sanctae-johannis Wkr.) (1 f) is an unmistakable lepidopteron. Forewing *sanctijohannis*. white, in the basal half with olive-green and slate-coloured blue, in the marginal half more violettish-purple markings. Hindwing and abdomen uni-coloured yellow. The first specimen, the type, was taken in England (Horsleydown); otherwise the species is only known from Mexico.

E. grata F. (= assimilis Brd.) (1 f) has much more extensively white forewings, and the hindwing *grata*. shows a purple marginal band. United States. — The larva is whitish, the head, neck and anal valve red as well as transverse stripes across all the rings, wherein are the black tubercles; between them there are several purple transverse lines. It lives on the wild vine.

E. cypris Grt. is conspicuous by its uni-coloured vermilion hindwings, but according to the description *cypris*. it seems otherwise to be allied to *grata* and *unio*, though the ground of the forewing is not white, but cream-coloured. Described according to 1 ♀ from Assumption.

E. brevipennis Stretch. (1 f) is very closely allied to the following, but easily discernible by the black *brevipennis*. cell-spot of the orange-yellow hindwing with a purple-red marginal band. California. — The larva is white, on each ring with an orange transverse band in which are the black tubercles; between them there are numerous black transverse lines; head reddish-brown, spotted black, neck white, anal valve orange.

E. unio Hbn. (1 f) as the preceding, but the pale yellow hindwing is without the black discal luna. *unio*. United States. — The larva likewise resembles that of *brevipennis*, but its ground-colour is more yellowish; it lives on Vitis and Epilobium.

16. Genus: **Caularis** Wkr.

The 2 species of this genus are separated from the preceding by the long-haired 2nd palpal joint, bicombed antennae in the ♂, a coniform frontal projection and long-haired tibiae. No difference in the neurulation.

C. undulans Wkr. (= bartholomaei Bsd.) (1 g). Forewing white, mixed with olive-brown, most *undulans*. densely so at the costal margin and proximal margin; a triangular spot in the basal half of the proximal margin, the 2 maculae pupilled silvery blue and a curved, broad, posterior transverse band are olive-brown. Hindwing light orange-yellow with a red marginal band. Jamaica; Hayti; St. Bartholomy.

C. lunata Hmps. (1 f) shows on its olive-brown ground a broad, white, discal longitudinal band termina- *lunata*. ting into the costal margin before the apex of the forewing; the cell-maculae are dark olive pupilled silvery; the posterior transverse line is of a deep red, inside bordered with white; at the anal angle a white spot. Hindwing yellowish-white with a large dark discal luna and a purple marginal band. Bahamas.

17. Genus: **Erocha** Wkr.

Palpi extended straight forward, scarcely projecting beyond the frons, haired downward; frontal projection rounded with a coniform continuation and a horny plate beneath it. ♂ antennae bicombed, in the apical third serrate or also only ciliated (in *semiviridis*). Thorax rather long-haired, intermixed with scales. Tibiae haired moderately long. Base of abdomen with a thick hair-tuft. All the rest without any peculiarities.

E. dolens Drc. (1 g) is a pretty species almost resembling a *Momina*: forewing creamy-white, densely *dolens*. dusted with a chocolate colour; before the proximal and behind the distal, very much bent, dentate black transverse stripes the ground-colour remains white; the maculae and a dentate band before the speckled fringes are black. Hindwing pale yellowish, with a dark postmedian line, the anal tuft is likewise yellowish, the rest of the abdomen black. Peru and Bolivia.

E. trita Drc. (5 b) extremely approximates *dolens*, but it is more thinly scaled, more grey. The hind- *trita*. wing is cream-coloured with a fine black marginal line and white fringes; anal tuft more rust-coloured. Peru and Bolivia at altitudes of 9 to 10 000 ft.

E. picta spec. nov. (5 b). Forewing creamy-white, at the costal margin, proximal margin and border *picta*. black, thickly strewn with bluish-white, chalky scales, like the space between the median vein and lower radial vein as well as the ring-shaped and reniform macula; a bent posterior transverse line surrounds the reniform macula in a large bow. Three longitudinal patches in the basal area at the costal margin, proximal margin and below the median, as well as 7 oval marginal spots are coppery-bronze; the black fringes are speckled white at the base. Hindwing black with a white discal spot in the ♀, in the ♂ quite black; a small spot in the middle of the costal margin is orange-yellow. Abdomen black with an ochreous-yellow anal tuft. Described according to a couple from Coroico (Bolivia) from the Coll. FASSL.

E. leucodisca Hmps. (1 i) has in the ♂ combed, in the ♂ serrate antennae. In contrast with the *leucodisca*. similar species the hindwing being white in the disc is not traversed by black veins. Described from Peru.

- mummia*. **E. mummia** Cr. (= *discreta* Wkr.) (1 g) is similar, but much smaller; the white postdiscal spot of the forewing is only indicated by white striation of the veins proceeding from the cell-end, and the hindwing shows the somewhat diaphanous white discal spot veined black. From Venezuela, Guiana and Brazil.
- leucotelus*. **E. leucotelus** Wkr. (= *serpentinum* Fldr., *juanita* Schs.) (5 b) is not to be mistaken for any other species owing to the white apex of the forewing. The hindwing is quite black with snow-white fringes. From Mexico, Colombia and Peru.
- semiviridis*. **E. semiviridis** Drc. (1 g) is easily distinguished from the very similar *leucodisca* by its plain, ciliated antennae, the white disc of the hindwing being veined black besides. From Bolivia and Peru.
- elaeina*. **E. elaeina** Zerny (5 b) is much smaller and stouter than the preceding, the large, purely white post-cellular spot on the forewing is merely indicated by a somewhat creamy, light patch and bluish-white dusting of the veins on the olive-green ground. Hindwing creamy-white with a blackish-brown costal margin and border extending to the base of the wing. Numbers of it were taken by FASSL on the Rio Songo in Bolivia.
- affinis*. **E. affinis** spec. nov. (5 b) greatly approximates *elaeina*; it has a large, white postdiscal spot outside and below broadly bordered with olive-green, the costal margin remaining broadly white; the rest of the forewing is purple-blackish, densely strewn with violettish-grey scales forming an indistinct dentate antemarginal line; on the middle of the proximal margin there is a black-marked, almost square spot of the ground-colour, on all sides bordered by olive-green; the ring-shaped and reniform maculae are green, the latter parted by white. Fringes towards the proximal angle white. Hindwing blackish-brown with grey, at the tips white fringes. Body black, on the head and thorax mixed with white hair; abdomen beneath and laterally from the 2nd to 5th ring orange. 1 ♀ from the Rio Songo (A. H. FASSL).

18. Genus: **Mystrocephala** H.-Schäff.

This genus is chiefly distinguished from the allied genera by the veins rising from the upper cell-angle of the hindwing being petioled; on the forewing the upper subcostal vein proceeds from below the cell-angle. The palpi are bent downward; the antennae are somewhat expanded behind the middle, with short pinnae in the ♂. Thorax and tibiae are roughly haired, the abdomen, however; smoothly sealed.

- leuconoe*. **M. leuconoe** Fldr. (5 b) is recognizable by the tripartite or quadripartite whitish oblique spot on the purple-brown forewing and the yellow hindwing with black veins and a black marginal band. Colombia.
- pulverosa*. **M. pulverosa** Rothsch. (= *postica* Wkr. pr. p.) (1 i) is similar, but the oblique spot of the forewing is not parted by black veins. Panama, Venezuela.
- postica*. **M. postica** Wkr. (= *elavigera* Wkr., *aeruginosa* Wkr., *quadrimeacla* H.-Schäff.) (1 g). Deep red-brown on the anterior body and forewings, on the latter with a round, creamy-white postcellular spot; hindwing yellowish-white, broadly veined black, with a black marginal band, the ♀ is without the black stripes towards the proximal margin. Brazil.
- albiceps*. **M. albiceps** spec. nov. (5 b) is very similar, but easily discernible by its creamy-white hindhead, collar and shoulder-covers. The Hindwing only exhibits a narrow, club-shaped, creamy-white spot. The legs are externally covered with long, creamy-yellow hair, the 2nd and 3rd abdominal ring laterally and the under surface of the anal tuft are orange. 1 ♂ from Muzo (Colombia) (A. H. FASSL).
- colombiana*. **M. colombiana** Hmps. (1 g) differs from *postica* by the longer oblique spot of the forewing and the small and black-dusted postcellular spot of the hindwing in the ♀, which is exhibited by the ♂ only beneath. The ventrum of the ♂ shows light yellow bands. Colombia.
- aguirrei*. **M. aguirrei** Berg (1 g) is easily discernible from all the others by the small white spot above the middle of the proximal margin; the postdiscal oblique spot is somewhat strangulated; on the blackish-brown forewing dusted with greyish-white a red colour spreads from the base through the middle of the wing to the border on which it extends as a narrow stripe up to the apex. Hindwing dark brown. Argentina.
- ovata*. **M. ovata** Rothsch. (= *unipuncta* Schs.) (1 h). Deep chocolate-brown, densely strewn with yellowish-white with a small oblique spot on the forewing. The unicolorously blackish-brown hindwing with apically white fringes shows beneath white stripes on the costal margin, median and inner-marginal vein. Brazil to Argentina.
- spadicea*. **M. spadicea** Fldr. (1 e) is deep red-brown with a long, narrow, yellowish oblique spot on the forewing and orange anal hairing. Common in Colombia, Bolivia, Ecuador and Peru.
- isabella*. **M. isabella** Dogn. (1 i) is similarly marked, but it has a light brick-red ground-colour of the forewing; the hindwing is somewhat more yellowish. Ecuador.

19. Genus: **Letaba** Dyar.

Forewing with an accessory cell; forelegs without spines. Frons with a stunted, conic projection. Thorax and abdomen without tufts. Eyes large, round. Frontal projection short, in front flattened, with scarcely bossed margins; palpi oblique, thickly scaled, with a short terminal joint. Founded on 1 species discovered by Mr. ROBERT MÜLLER in Mexico in 1909.

L. noa *Dyar*. Above quite black with white fringes. Beneath the proboscis, palpal base, the base of the forewing and the basal half of the costa of the hindwing are orange; 43 cm; Zacualpan, in September, type in the National Museum at Washington. *noa*.

20. Genus: **Gerra** *Wkr.*

Distinguished by obliquely rising palpi, the 2nd joint of which shows beneath long, beard-like hair; the 3rd is short. The frons exhibits a large, rounded projection with a coniform crest in the middle and a horny plate below it; ♂ antennae with moderately long pinnae, in the ♀ serrate. Tibiae with long hair. Neuration without any differences.

G. radicalis *Wkr.* (= *adrasta* *Drc.*) (1 i). Forewing chocolate-brown, strewn with silvery blue scales, maculae bordered with red-brown; a posterior, finely dentate transverse stripe is likewise red-brown, distally bordered with yellowish-brown and proximally accompanied by a purple-brown dentate line. Hindwing orange with a black marginal band. Mexico. *radicalis*.

G. sevorsa *Grt.* (= *aedessa* *Drc.*) (1 i) resembles the preceding, but it has a whitish costal-marginal spot behind the reniform macula and a less blue reflection; beneath there is, as in *radicalis*, a broad, orange, postmedian oblique band. The nomenclatural type originates from the United States (Arizona). The southern form: **meridionalis** *nom. nov.* exhibits besides beneath in the cell another, quadrangular, yellow spot and flies in Mexico and Guatemala. *sevorsa*. *meridionalis*.

G. aelia *Drc.* (5 b) is above scarcely discernible from *sevorsa*, the ground-colour of the forewing is perhaps somewhat duller greyish-brown, the orange of the hindwing more intense, the marginal band of it broader; beneath the oblique band behind the cell is white. Panama, Costa Rica. *aelia*.

G. brephos *spec. nov.* (1 h) likewise greatly resembles *sevorsa*: forewing more grey strewn with lustrous bronze scales; the reniform macula is in a rectangular line towards the proximal margin, in *sevorsa* towards the costal margin; the dentate posterior transverse line is more distinct, extends parallel to the border and does not make a bend round the reniform macula. Beneath only an orange postdiscal band, the ♂ is without the square cell-spot. Described according to 2 fresh couples from Mexico (Zacualpan) taken in July (type in Coll. DRAUDT). *brephos*.

G. sophocles *Dyar* (1 h) shows rather hazy colours, on the forewing blackish-grey, scantily strewn with silvery scales; the maculae and 2 postmedian dentate lines are red-brown, behind the reniform macula an oblique, whitish patch. Hindwing black with white fringes. Body black, collar, shoulders, thoracal sides and the bases of the wings beneath orange. Mexico (Guerrero). *sophocles*.

G. pulchra *spec. nov.* (1 h) has more extended forewings with a more oblique distal margin: purple-grey intermixed with silvery grey scales; the costal margin and numerous dentate, very oblique transverse lines of a deep red-brown, the postmedian line encircles, twice flawed, in a large bow the red-brown, silvery grey pupilled reniform macula behind which there is faint yellowish patch. Hindwing orange with a blackish-brown marginal band particularly broad towards the apex. Forewing beneath with a postdiscal orange oblique spot. Described according to a ♂ from Mapiri (Bolivia), but there are also numerous specimens from Colombia (Pacho, Muzo, Rio Negro) from the Coll. FASSL. *pulchra*.

21. Genus: **Gerrodes** *Hmps.*

Distinguished from the preceding by its ciliated antennae, haired thorax with a hair-tuft on the meta-thorax. On the abdomen only the basal segment shows a tuft, in *Gerra* the first 4 or 5 segments. No difference in the neuration. Only 2 larger species:

G. longipes *Drc.* (1 k). Forewing brown, in the marginal area more grey. The fine, dark brown postmedian line is in the upper part parallel to the border, in the lower it is double and runs parallel to the costal margin to the base of the proximal margin; another fine, dentate line before the border; at the costal margin another oblique, lighter subapical patch. Hindwing orange, with a black marginal band. Mexico. *longipes*.

G. minataea *Dyar* (= *longipes* *Holl.*) (1 k) is very similar, easily discernible by a still lighter coloured border and proximal margin; the postmedian line is, particularly in the lower part, broadly bordered with white. United States, Mexico. *minataea*.

22. Genus: **Aucula** *Wkr.*

Distinguished from the two preceding genera by a somewhat longer, porrect 3rd palpal joint, the thorax and abdomen without tufts, and the upper radial of the forewing rising from below the upper cell-angle.

- josioides*. **A. josioides** Wkr. (1 i) is a larger, stronger species. Hindwing orange with a black marginal band; abdomen black. Brazil.
- buprasia*. **A. buprasia** Drc. (1 g). Smaller than the preceding. The proximal margin of the hindwing is much more extensively black. Abdomen black with an orange anal tuft. On the figure the light postdiscal spot is much too prominent, in reality it scarcely stands out from the ground-colour. Guiana, Ecuador and Bolivia.
- tricuspis*. **A. tricuspis** Zerny probably belongs to a separate genus, as the frontal cone terminates into 3 tips extending in one horizontal line. Forewing dark red-brown, at the costal margin and border light cinnamon-coloured red, strewn with yellowish; the reniform macula indistinctly darker; fringes greyish-brown, hindwing orange-yellow with a very broad dark brown marginal band. Abdomen bluish-black with an orange anal tuft. Brazil. Expanse of wings: 21 mm.
- hilzingeri*. **A. hilzingeri** Berg. (1 k). Forewing red-brown, strewn with white, with 2 irregularly dentate transverse lines, the posterior line with white costal-marginal and inner-marginal spots; the reniform macula is small, dark. Hindwing orange with a black marginal band, both wings with fringes speckled black and white. From Argentina.
- magnifica*. **A. magnifica** Schs. (1 k) resembles *hilzingeri*; hindwing lighter yellow, with a much broader black marginal band and discal luna; on the forewing there is between the maculae a V-shaped white spot; the abdomen is uni-coloured black, beneath with whitish hair, in *hilzingeri* laterally at the base and anus orange. South Brazil.
- janeira*. **A. janeira** Schs. (= *marginalis* Rothsch.) (1 k). Forewing chocolate-brown with a whitish costal margin projecting before the middle broadly triangular, behind it hook-shaped downward, and sending from the apex of the triangle a fine white line to the anal angle before which it bifurcates. Hindwing orange-yellow, bordered with black. This very peculiarly marked insect flies in Brazil (Rio de Janeiro).
- sublata*. **A. sublata** Wkr. (1 h) is a smaller, dark brown species strewn with bluish-white, with indistinct transverse lines on the forewings; hindwing yellow with a black marginal band. Brazil (Amazon).

23. Genus: **Vespola** Wkr.

This genus contains only one, rather robust species with very long, slender, ascending palpi; the 3rd joint is thickened at the end. Forehead without any projection. Antennae finely ciliated; thorax clad with scales, in front and behind with tufts, the abdomen on the first rings likewise with tufts.

- caeruleifera*. **V. caeruleifera** Wkr. (1 h) is purple brown on the forewing, intensely strewn with blue scales, with dentate, darker transverse lines and the two maculae. Hindwing blackish-brown, in the disc metallic blue. The abdominal rings 2 to 5 are laterally banded bluish-silvery. Widely distributed in Mexico, Panama, Colombia and Peru.

24. Genus: **Psychomorpha** Harr.

The short, long-haired palpi show straight forward. The frontal cone is pointed; the eyes are small, elliptical; ♂ antennae bi-combed; thorax, abdomen and tibiae with long and rough hair. Only 2 small, similar species from North America:

- euryrhoda*. **P. euryrhoda** Hmps. (1 k). Body and forewing blackish-brown, strewn with metallic blue scales; behind the middle of the forewing there is a broad white oblique band, proximad strangulated at the lower cell-angle. Hindwing as far as the margin fiery copper-red with a black base, fringes dark brown. Hitherto known only from Florida.
- epimenis*. **P. epimenis** Drury (1 k) is very similar; the proximal margin of the white oblique spot projects pointedly proximally below the median. The hindwing is more orange-coppery *), the border broader blackish-brown. From the United States. — Larva on each ring marked with 4 light yellow and 4 purple-brown transverse bands; head, neck-shield and anal valve red with black tubercles. It lives on the vine.

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* signifies that the form is also figured at the place quoted.

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2. Family: Noctuidae.

As has been asserted several times in this work and also mentioned on p. 2 in commenting upon the „*Noctuiiformes*“, the elaboration of the Noetuids will as much as possible follow Sir GEORGE HAMPSON's excellent „Catalogue of the Lepidoptera Phalaenac“. But as the „*Acronyctinae*“ of our Vol. III have been published before HAMPSON's elaboration of this group, we have here kept up the former division and delimitation in order to agree with the previously extensively utilized Noctuid system of HERRICH-SCHÄFFER, which had even been used already before this author (by OCHSENHEIMER and TREITSCHKE) with respect to the *Acronicta*-group, and had been but slightly altered by LEDERER in his European Noctuinae. HAMPSON enumerates the *Acronicta*-like Noetuae that had formerly been comprehended, the *Mominae* and *Bryophilinae* remotely apart from each other, inserting the *Mominae* yielded from furry larvae between the *Catocalinae* and *Plusiinae* (= *Phytometrinae*), whilst he places the *Acronicta* into a narrower group with the *Prodenia* and *Alethis* (= *Caradrina*), inserting the *Bryophilinae* between the *Eriopus* and the *Polyphaenis* (with *matura* Hfn.); these are places where but few will look for them and where they only could be brought to by entirely shutting out the larvae.

Except this group, the Noetuid system employed here chiefly follows HAMPSON's Catalogue from which also numerous figures were copied.

The other subordinate groups can with greater facility follow the catalogue of the British Museum since there exists hardly any polytypical genus of Noetuids that is not represented in America. The total number of American Noetuid species known already approaches 10 000 to-day. DYAR mentions (1902) for Boreal America (to the north of Mexico) 2126 species which number will have increased again by this time. The Colombian expedition of the collector A. H. FASSL alone yielded more than 100 new American species of this family, and as great districts of Central South America are still entirely unexplored, we may expect an enormous increase of new descriptions of American Noetuae.

Of the first, above-mentioned division of the *Acronictinae* above all the *Acronicta* themselves are excellently represented in America, especially in the boreal parts, in contrast with the Indian region where only the green *Canna* and the large *Trisuloides* have become known in some conspicuous forms, the real *Acronicta*, however, only in a dozen of species, and particularly also in contrast with Ethiopian Africa where the genuine *Acronicta* are absent altogether.

The same as in the typical *Acronicta* is also the case in the *Mominae*, of which 50 percent of all the species known are confined to America, whereas the small group of *Bryophilinae* is scarcely to be found in America: we only meet there with 3 *Bryophila* (*Metachrostis*) from among wellnigh 50.

Exceedingly great, however, is the number of *Euxoinae* or *Agrotinae* as the group is generally called. It is cosmopolitan, and the immense number of specimens in which many species occur forms the essential part of the insect-fauna of all the temperate and warm countries. If they do not appear to predominate so much in the tropics as other Noctuid groups, this impression may be due to their keeping very well hidden in day-time. Whosoever is hunting with the lantern in open districts, even in deserts destitute of vegetation, will find that nearly in all the zones the *Euxoinae* number among the most common lepidoptera. Particularly in grassy steppes the lanterns are alive with *Agrotis* at night, even where not one specimen was encountered in daytime. And such grassy steppes form a great part of the American Continent: to the north the prairies, in the neotropical north the llanos, and to the south the pampas.

Almost the very same is the case with the *Hadeninae* being mostly recognizable by the unarmed tibiae. They also exhibit a just as great homogeneity in the shape as in their distribution. Some American *Polia*, such as *P. imbrifera*, *grandis* or *nimbosa* are rather conspicuous forms, and the *Hadena meridionalis* frequently flying to the lanterns in Southern Brazil is remarkable for its elegant marking. Though we do not meet with such charming insects in America as the Indian *Polytela* (Vol. XI, t. 11 a, b) are, yet there are species such as the well-known *Xanthopastis timais* already figured by the most ancient authors, standing forth from the great number of its otherwise homogeneous allies by its conspicuous colouring and marking. The so-called Leucanii-forms, the *Hyphilare*, *Sideritis*, *Meliona* etc. are mostly common in America as well as in the Old World, and some, such as *Sid. unipuncta* often does great harm there, particularly to the sugar-cane and maize, as well as to other produce of the fields.

The *Cuculliinae* in America exhibit almost exactly the same exterior as in the Old World, since grey, brown and variegated forms also occur there. Certainly they are chiefly at home in North America. But then there appears again, distantly separated by wooded districts poor in *Cucullia*, to the south a parallel form to our European silvery *Cucullia*, *Cucullia (Empusada) argyrina*. Not only by its exterior but also by its behaviour it copies so exactly the palearctic *Cuc. argentina* that both, if they were not separated by oceans, could not be distinguished in the open air. Their habit of resting on the barbed wire poles and, in case they are scared up, of settling down on blades again at a distance of about 10 to 20 m, I found to be quite the same in Montevideo in the west (*argyrina*) and in Constantine in the east (*argentina*).

As to the *Amphipyriinae*, the number of species occurring in America is by far superior to that of the Old World. Some European species, such as *Amphip. pyramidea*, *Dipterygia scabriuscula* etc. have scarcely changed in America. Of the *Parastichtis* there occur again exactly 50 percent in America, therefore as many as in the whole other world together; as to the *Trachea* and allied genera the proportion is still more in favour of America, but on the western hemisphere there do not occur any forms similar to the few eastern forms distinguished by their size and colouring, such as *Mania maura* and *Orthogonia sera*.

The *Melicleptriinae* and *Heliothidinae* form not very extensive groups of mostly brightly coloured Noctuids also flying in day time. *Chloridea obsoleta*, feared by the cotton-planters as *Heliothis armiger*, is the noxious „cottonworm“ which has already caused quite a literature on its noxiousness and preventative means. Exactly like in the Old World this insect spares immense districts also in America, occurring not at all or but quite rarely, in order to reappear in numberless multitudes beyond a certain, natural barrier. Similar to its flying in the Old World from England to the Cape of Good Hope and Melbourne and from Spain to Japan, we cannot find any place in America from Canada to Patagonia that is secure from this vermin, because it makes its appearance wherever the primeval forest, which it seems to shun, is cleared for cultivating purposes.

The *Erastrinae* containing now already more than 1200 well-known, mostly rather small species are distributed over the whole globe, but they are predominantly tropical in America as well as on the eastern hemisphere. They chiefly prefer open districts and arid soil; arid steppes and stony hillsides often contain immense numbers of these white or variegated insects. That is why chiefly Africa is inhabited by a great number of species some of which are extremely variegated. In America the species especially increase in the prairie-states of Texas, Colorado, Arizona, in South America in Uruguay and Argentina. The *Spragueia*, *Conochares*, *Tarachidia* etc. contain numerous small, though elegantly and contrastingly coloured species. A great number of genera belonging hereto are entirely confined to America.

The *Eutelinae* with bare, unciliated eyes, and unspined tibiae generally armed with hair-combs, are not a large group, but they contain rather peculiar shapes. The strange attitude of repose characterizing the European *Eutelia adalatrix* is also exhibited by the American species of this genus, resting head downwards on trunks and planks, with their wings spread obliquely downwards and bending their abdominal end upwards. On the whole, the number of American *Eutelinae* is but small; *Stictoptera* with the peculiarly hyaline, but thickly black-margined hindwings occur only singly and they are mostly only taken by the lantern; there are no such odd creatures at all in America as the African *Gigantoceras* with antennae longer than the body, thickly protruding eyes and spider-like long legs.

The *Sarrothripinae*, generally recognizable by their flat structure and the appressed hairing of the body, altogether only contain about 350 forms. There are no genuine *Sarrothripus* in America at all, but the palearctic *Gadirtha* with subuliform palpi and being pantalooned have parallel forms on the western hemisphere in the *Iscladia*, *Pucialia*, *Lophosema* and other genera, although there do not occur such magnificent forms as for instance *Eligma* in the Old World.

The *Acontianae* are the best represented of the allied groups, and most elegant creatures are the *Eugraphia* the name of which already alludes to their beauty, and the neat though little *Tarache*. — Entirely absent, however, are the grass-green Noctuids from the group of the *Earias*, *Hylophila* and *Tyana*.

About the *Catocalinae* we have already told something in the preface to this volume. In North America they are represented by about 200 forms, disappearing almost entirely on passing over into the Mexican desert and not reappearing anymore to the south of it. In South America, however, there occur some species of the similarly coloured *Ophideres*, although they do not play there the important part which they do in the Old World. But just that species which is suspected to be the most noxious to the fruit-crop by pricking with their pointed proboscis into the fruits, numbers among the few Noctuids being common to both South America and the Old World.

The *Plusiae* neither differ in America from their behaviour which is invariable in nearly all the countries of the globe. The number of the abundantly metallic-marked species is also in America larger

in the temperate zone than in the tropics being otherwise so rich in metallic colours. In America we do not find any *Plusiae* so luxuriantly laden with gold as some palearctic species are, such as *Plusia chrysitis* or *zosimi*.

The real *Noctuinae*, a group composed of so numerous and multiform components that nothing pertaining to them as a whole may be stated, are already in our palearctic fauna represented by more than 100 genera; unparalleled, however, is their great number in America, especially in the neotropical districts. We have already mentioned above the gigantic forms (*Thysania*, *Erebus*, *Letis*) occurring there. *Thysania agrippina* for its enormous size is even known to a layman in South America and is in Brazil publicly known by the name of „O imperador“ (which must not be mistaken for the „Emperor-Moth“ of the United States, being a *Ceratocampida*). The members of this group are extremely fond of the light, and quite a number is hardly ever captured in another way than by the lantern. Only the very large species are during daytime sometimes met with beneath bridges and roofs, but nearly all the smaller species come to the bait, although this mode of capturing is in the tropics mostly not so profitable as in the temperate zone.

As to the last group, the *Hyppeninae*, America abounds in them. The excessive formation of the palpi, being almost general in this group, sometimes attains in South American specimens such a degree that the palpi, even after they have been closely clapped together must be laid back in a long bend over the thorax and abdomen in order not to check their faculty of motion. In other genera the palpi have become fluffy wool-pads the single joints of which are connected by folding-articulations, in order to be clapped together. Other groups again exhibit beside abnormally developed palpi also indentations in the wings or anomalies on the legs.

In the preface to this volume we have already mentioned the fact that America is to be regarded as the most important continent for the family of the *Noctuidae*, and the short survey of the Noctuid fauna of the western hemisphere which we supplied here, has shown us that in America the Noctuids predominate by their size, polymorphism and number. As to the above-mentioned approximate number of American Noctuids known, we may add yet that they excel the Indo-Australian Noctuids by more than double the number and that of the African (Ethiopian) three times, and that of the palearctic about four times.

1. Subordinate Family: **Acronictinae**.

What was said about the grouping of the Agaristidae, is here also the case: they are a mixture of quite heterogeneous subordinate groups of Noctuids, partly belonging to the so-called *Trifinae*, partly to the *Quadrifinae*; but in order not to upset the total structure of the work we nevertheless follow the observance adapted in the other volumes and having hitherto been adhered to in most of the other works.

The only common feature are the haired larvae which are partly also provided with pencils or brushes.

As to the veins, nothing pertaining to them in common can be said, the hindwing exhibiting in some species a well-developed middle radial which is in others again feeble or entirely absent. In the *Mominae* the eyes are hairy, in the others they are bare. They are mostly medium-sized or large species, almost throughout strong, partly, at least in the latter group, with rather variegated markings.

Subordinate Group: **Mominae**.

Mostly rather large, strong insects, very well characterized by their densely haired eyes and by the presence of a strong middle radial of the hindwing rising below the centre of the transverse vein.

The larvae, as far as they are known, exhibit hair on the tubercles, some with dorsal pencils, and live on trees, particularly conifers.

1. Genus: **Colocasia** Hbn.

Proboscis stunted; palpi porrect and long-haired, projecting a little beyond the smooth frons. Male antennae bi-combed. Thorax and legs long-haired, abdomen with dorsal hair-tufts.

C. flavicornis *Smith* (2 a). The whitish forewing is dusted with brown and exhibits several dentate *flavicornis*. lines like all the other species. The inner-marginal half of the discal area is quite dark, so is the basal area. In contradistinction to the sometimes rather similar *propinquilinea*, the transverse stripes are connected on the submedian fold. United States, in May.

C. electa *Smith* is quite similarly marked, likewise with a darkened inner-marginal half as far as the *electa*. discal area inclusively, but the forewing is bluish-grey, dusted with blackish; the anterior transverse line is on

the submedian fold connected with the posterior one by a black streak; the white ring-macula is pupilled black; hindwing diaphanous blackish with black and white speckled fringes. Expanse of wings: 38 to 40 mm. Canada.

propinquilinea. **C. propinquilinea** *Grt.* (2 a) has uni-coloured greyish-white forewings dusted with brown and quite similarly marked as the preceding, but the transverse stripes never connected, hindwings white dusted with brown, towards the margin darker with whitish marginal streaks. — Larva entirely like that of the European *C. coryli* *L.* and likewise living on various foliage-trees. United States, May to July.

infanta. **C. infanta** *Smith* resembles *propinquilinea*, but it is somewhat smaller and with darker brownish-grey forewings; the small white ring-macula without a pupil. Hindwing blackish-brown. Expanse of wings: 37 to 42 mm. United States.

2. Genus: **Diphthera** *Tr.*

Very much like the preceding genus, chiefly only different by the second subcostal vein of the forewing rising from the cell, and by a very long, narrow accessory cell which is very small in *Colocasia*, whilst the said subcostal vein is forked with the others. Half a dozen of North American species, two others being palearctic or East Asiatic respectively. In the American catalogues most of the species are to be found among the *Panthea*.

acronyctoides. **D. acronyctoides** *Wkr.* (= *leucomelana* *Morr.*, *eucomelana* *Smith*) (2 a) is the smallest species with the lightest forewings, almost purely white with a faint yellowish tint and distinct, black, dentate transverse lines and a punctiform ring-macula, recognizable by the median line forming a distal tooth on the median vein; the space between the median line and the posterior transverse line is mostly much darker. Canada, United States; in June.

furcilla. **D. furcilla** *Pack.* (2 a) is whitish-grey, very variable by more or less brownish dusting with a rather distinct, white, dentate antimarginal line and an almost straight, black, anterior transverse line, the median line being almost straight, too; no maculae at all. Fringes speckled brown with white. Canada, United States; June to August. — Larva reddish with whitish dorsal and lateral stripes, tubercles orange, red, in front more yellow-haired, with black hair-pencils on the 1st, 2nd, 4th, and 11th rings. It lives on *Larix* and *Pinus* in August and September.

portlandia. **D. portlandia** *Grt.* (2 a) is much larger than *furcilla*, the white ground-colour is more prominent on the forewings and the anterior transverse line is not straight but sinuately dentate; the median line is also somewhat undulate, in the cell before it a dark streak, all the lines more blurred, not so distinct, the maculae are present. Canada, United States.

gigantea. **D. gigantea** *French* (2 a) is a very large, strong species strewn with dark brownish-grey on the forewings, the transverse lines being rather straight, the white antimarginal dentate line blurred, the reniform macula absent or present. Colorado, Texas.

virginaria. **D. virginaria** *Grt.* (2 b) is still larger and darker, the veins marked darker, ring-macula and reniform macula present. Described from California.

palata. **D. palata** *Grt.* (2 b) in its exterior is more like a *Charadra*; smaller than the preceding with entirely white hindwings; on the forewing the median line is broad, faded, and it darkens the space between the maculae; the anterior and posterior transverse lines are connected by a black longitudinal streak on the submedian fold; the dark, distally white antimarginal line is not dentate, but only somewhat undulate. The species flies in Colorado and Arizona.

3. Genus: **Charadra** *Wkr.*

Discernible from the preceding genera by the well developed proboscis; the metathorax exhibits a hair-tuft; the abdominal tufts are particularly large on the dorsum of the middle rings. In the veins no difference. The genus only contains American species proceeding to the south as far as Mexico and Costa Rica.

pata. **Ch. pata** *Dre.* (2 b) is at once discernible from all the other species by the yellow hindwings being bordered with blackish-brown. From Arizona through Mexico to Guatemala.

nitens. **Ch. nitens** *Schaus* (2 b) from Costa Rica is quite similarly marked on the forewing, with intensely lustrous silvery scales in an oblique light, the space as far as the reniform macula in the costal part darkened by a brownish grey, behind it a conspicuous whitish spot; hindwings brownish-grey. From Mexico I received *jalapensis.* by the name of **jalapensis** *form. nov.* (2 c) — I am unable at present to find out the author's name — numbers of a very large form more intensely darkened by a blackish grey, in which the light postmedian spot is scarcely noticeable; hindwing also quite blackish-grey. The species is presumably only a form of *deridens* *Guen.*

Ch. ingenua *Smith* (2 b) is likewise very similar, but the forewing with a more bluish-grey ground-colour, the antimarginal line only feebly undulate, not so strongly dentate as in the other species. Hindwings much lighter. Colorado. *ingenua.*

Ch. deridens *Gn.* (= *circulifera Wkr.*, *contigua Wkr.*) (2 e) looks like *jalapensis*, but it is of a quite light ground-colour, slightly yellowish. From Canada to Florida and Texas, to the west as far as Colorado, flying from May to July, in Canada already in February. — In the form **fumosa** *form. nov.* the inner-marginal half of the discal area and the space behind the posterior transverse line are darkened. — Larva, varying from whitish to greyish-black, without markings or in dark specimens with white dorsal spots, exhibits long white silky hair on grey tubercles, with single black lateral hairs. It lives in October on oak, birch and elm trees. *deridens.*

Ch. sudena *Smith* is a smaller species with fainter transverse lines; the connecting streak on the submedian fold is mostly absent, the small light ring-macula is entirely unpupilled, and the antimarginal line more regular. Florida. Expanse of wings: 34 to 36 mm. *sudena.*

Ch. nigracreta *H. Edw.* (= *rhotana Drc.*) (2 c) differs by the chalky white ground-colour and a blackish-brown, triangular costal spot being mostly united with another one coming from the proximal margin. Hindwing dark brownish-grey. Mexico, Guatemala, Costa Rica. From Mexico there are entirely white specimens before me: **creta** *form. nov.* (2 c) and from Costa Rica such exhibiting only the dark triangular costal spot: **triangulum** *form. nov.* (= ab. 1 *Hmps.*) which seem to me to be on an average much smaller. *nigracreta.* *creta.* *triangulum.*

Ch. dispulsa *Morr.* (2 c) differs by the intense yellowish tinge of the forewings and entirely light hindwings. From Texas in apparently 3 generations from March to October. *dispulsa.*

4. Genus: **Bathyra** *Wkr.*

It contains the largest and strongest species of the subordinate group characterized by hair-tufts on the pro-, meso-, and metathorax; the abdomen is likewise tufted, and the largest hair-tuft is on the 3rd ring. All the rest like in the other genera. Hitherto only 2 southern species are known.

B. sagata *Wkr.* (2 d) is a large, beautiful, variegated species well recognizable from the figure. It is widely distributed from Mexico through Colombia, Venezuela, Surinam to Peru, also in Santo Domingo. *sagata.*

B. chavannesi *Fldr.* (2 d) differs from the very similar preceding species by less orange dusting and a distinctly marked reniform macula which is in *sagata* only indicated by small black and white spots. Described according to a specimen from Brazil. *chavannesi.*

5. Genus: **Gaujonia** *Dyar.*

Recognizable by the untufted thorax being only covered with hair, and by the upper radial of the forewing rising from below the upper cell-angle. The genus only contains 4 species being very similar in the exterior, with diaphanous forewings.

G. arbosi *Dogn.* (2 e) has diaphanous forewings with yellow, black-dotted veins; the transverse lines are traceable by a more intense dotting, only in the ♀ they are somewhat more distinct. Colombia, Ecuador, Peru. *arbosi.*

G. arbosioides *Dogn.* (2 e) differs by the forewings being tinted sulphur-yellow with distinct dentate transverse lines. From Colombia and Ecuador. *arbosioides.*

G. vau-nigrum *Hmps.* (2 e) has somewhat less yellowish forewings, otherwise very similarly marked, but well discernible by the V-shaped black spot at the rise of the lower median vein. Colombia, Venezuela, Peru. *vau-nigrum.*

G. renifera *Hmps.* (2 e) is the same, but it has a blackish-brown abdomen and a moon-shaped black filling of the reniform macula. Described from Southern Peru. *renifera.*

6. Genus: **Lichnoptera** *H.-Schäff.*

Distinguished from the preceding genus by the thorax being intermixed with hair-shaped scales and by the uppermost radial rising from the upper cell-angle.

L. cavillator *Wkr.* (= *bivaria Wkr.*) (2 g) is an extremely variable species the forms of which are regarded as distinct species by HAMPSON, though I am of a different opinion; many hundreds of specimens have passed through my hands, all the forms denominated are connected by the slightest transitions, so that a distinct delimitation is impossible. The nomenclatural type has white forewings with torn black transverse

- lines, the posterior one being more or less band-shaped, somewhat shaded with grey; a small black ring in the centre of the cell together with a similar one below it forms the figure of an 8; the hindwing is dusted with blackish-brown with indistinct darker transverse bands in the centre and towards the margin. — The other forms have white hindwings: **decora** *Morr.* (2 c, f) if the fringes are speckled black and white, — **felina** *Drc.* (2 f) if they remain uni-coloured white. — The white ground-colour may in all the forms run through all tints to sulphur-yellow; such extreme specimens may be denominated **flavescens** *form. nov.* (2 f); the specimen figured here shows at the same time that, when the fringes remain white, there may appear black streaks on the ends of the veins, but such specimens need not be specially denominated. — Transitions from typical *cavillator* to *gracilis* *decora* with somewhat lighter hindwings are to be named **gracilis** *Sch.* Especially light specimens of *felina* with less marking also on the forewing and no grey shading may be introduced as **reducta** *form. nov.* (= ab. 1 *Hmps.*). *Decora* occurs yet to the north in California, the other forms only occur more to the south beginning from Mexico and extend to Guatemala and Costa Rica; the species (though doubtful) is also mentioned from Cuba and Colombia. As to the early stages nothing is known.
- L. albidiscata** *Dogn.* (2 g) resembles the dark forms of the following species, but it has a much more uniformly brown discal area and before the undulate line only above and below the middle blackish-brown sagittiform spots, whereas *gulo* always exhibits an uninterrupted dentate line. Hindwing in the ♂ coppery brown, in the ♀ lighter, more yellowish-white with dark nebulous antemedian and postmedian bands. A lighter form with less dark forewings and whitish transverse bands in the centre and before the margin of the hindwing we denominate **albidior** *form. nov.* (= ab. 1 *Hmps.*) and specimens which are, like the similar species, of a yellow ground-colour: **flavescens** *form. nov.* (= ab. 2 *Hmps.*). Colombia.
- L. gulo** *H.-Schäff.* (2 h) is another variable species, large and strong, the ground-colour not purely white, but intermixed with coarse blackish-brown scales, especially in the discal area and before the subterminal line suffused with grey or reddish-brown. The marking is similar as in *cavillator*, but the transverse lines more distinctly expressed as dentate lines, the circular spot below the ring-macula is absent. In the nomenclatural type the ground-colour is sulphur-yellow, in **illudens** *Wkr.* (= *pythion* *Drc.*) white. In case the brown dusting is very predominant and also passes over to the hindwings, this is **rufitincta** *Hmps.* (= *cavillator* *Drc.* p. p.). The species is very widely distributed and known from Florida, Mexico, Costa Rica, Panama, Venezuela, and (doubtfully) from Colombia.
- L. primulina** *Dogn.* (3 a) is on the light sulphur-yellow forewing so densely strewn with blackish brown scales that only the veins and light dentate lines exhibit the pure ground-colour. Hindwings very thinly sealed. From Colombia.
- L. spissa** *H. Edw.* (3 a) is a little like *gulo*, but smaller with entirely blackened hindwings and abdomen, and with a very distinct black, dentate median line forming in the cell the proximal border of the clover-shaped reniform macula. In the ♀ the hindwings are white. Found in Mexico and Peru.
- L. marmorifera** *Wkr.* (3 b), like all the following, has a dark-pupilled reniform macula and the whole wing densely dusted with blackish-brown so that only the costal part remains light yellowish. Hindwing diaphanous white with a small, blackish anal-angular spot. Colombia.
- L. atrifrons** *Dogn.* (3 b) with the two following very similar species forms a separate group with entirely blackish-brown hindwings. It especially differs by its frons being spotted blackish-brown, and by a strongly and uniformly dentate undulate line. Colombia.
- L. moestoides** *Dogn.* (3 b as *investa*) has an entirely white frons and the undulate line is not so strongly dentate and above and below the middle indented. The pupil of the reniform macula is a small black spot, behind it the wing is almost entirely white, the proximal margin of the hindwing is in both sexes extensively yellow. Peru.
- L. moesta** *H.-Schäff.* (3 b as *moestoides*) differs from *moestoides* by the reniform macula being pupilled in the shape of a ring, the postmedian area of the forewing being more or less suffused with red-brown, and the proximal margin of the ♂ hindwing being but narrowly haired yellow. Venezuela.

Subordinate Group: **Acronictinae.**

Characterized by the feeble middle radial of the hindwing rising, if it is present at all, from the centre of the transverse vein, and by the bare eyes.

1. Genus: **Acronicta** *O.*

Medium-strong or small Noctuids with a developed proboscis and plain antennae; palpi rather short, turned upwards, the 2nd joint long-haired, the 3rd very short; frons smooth without projections. The thoracal covering chiefly consists of hair intermixed with hair-like scales, in some species also with broader scales without tufts. Abdomen basally coarsely haired, on the 1st ring a small, loose dorsal tuft. Veins

without any peculiarities. Very numerous whitish or grey species with distinct Noctuid markings and mostly very characteristic sagittiform or harpoon-shaped longitudinal streaks.

The larvae exhibit the most varied kinds of hairy covers, varying from single bristly hairs that are partly at the end spatulately expanded, to a star-shaped hairy cover on the tubercles and even to soft hairing of the whole skin of the body, frequently yet intermixed with hair-tufts or pencils. In case we acknowledge HÜBNER's preliminary examination (1806), the subordinate group is to be named *Apatelidae*, the genus itself *Apatela* Hbn.

Sect. I. Thoracal cover chiefly consisting of scales (*Hyboma* Hbn.).

A. theodora Schs. (3 b) has a greyish-white ground-colour and, like all the following, a black sagittiform spot on the submedian fold cutting the posterior transverse line and extending to the margin near the anal angle, and besides a black connecting streak to the anterior transverse line and a third on the discal fold from the posterior transverse line to the margin. Hindwing white, the veins brownish towards the margin. From Mexico and Guatemala.

A. mansueta Sm. (3 b) is much smaller, more violettish-grey mixed with brownish, particularly darkened at the proximal margin, less in the marginal area, similarly marked as the preceding, but without the upper longitudinal streak to the margin on the discal fold. Hindwing of a pure white. United States.

A. vinnula Grt. (3 c) is a small whitish species with a slight olive tint, not to be mistaken for any other. The black connecting streak between the transverse lines is absent, the latter are more or less olive-green; the black basal streak sends in the middle a hook to the proximal margin. Hindwing whitish, dusted with brown. Canada, United States to Texas. The green larva on each tubercle exhibits a stiff hair surrounded by shorter ones in the shape of a cross. It lives on elms.

A. paupercula Grt. (3 c) is somewhat like *vinnula*, but on the greyish-white ground it is dusted more with brownish or rather dingy reddish-yellow, the marking being otherwise similar, but the anterior transverse line and particularly the discal shade much more indistinct. Texas.

A. lepetita Sm. (3 d) is also like *vinnula*, smaller, the ground-colour is bluish-grey, mixed with brown especially before the margin, the undulate line quite indistinct. Hindwing darker. Described from Texas.

A. parallela Grt. (3 c) is recognizable by the posterior transverse line exhibiting one distal tooth each on the upper median and lowest radial vein; the ground-colour is violettish-grey, dusted with brown, without any reddish admixture; the most conspicuous mark is the sagittiform streak on the submedian fold to the margin, which appears to be double owing to a second streak above it. Texas, Colorado, Cansas in May.

A. albarufa Grt. (= *walkerii* *Andreas*) (3 d) differs from *parallela* by a reddish reniform macula, before it the cell is filled up with blackish, the ground-colour at any rate darker, especially in the ♀ which has also brown dusted hindwings, whereas the ♂ has white ones; the posterior transverse line as in *parallela*, but the sagittiform streak is plain. Canada, United States.

A. exempta Dyar is marked like *albarufa* (3 d), but less distinctly and but slightly prominent. The ground-colour is a bluish grey with a contrastingly dark red-brown reniform macula without a distinct bordering; ring-shaped macula indistinct. Hindwing suffused with blackish-brown. Expanse of wings: 34 mm. Described from New Mexico.

A. connecta Grt. (3 c) is well distinguished by the brown longitudinal shade on the submedian fold, extending from the base to the margin, though it leaves the proximal margin light; moreover the ground-colour is a dingy yellowish grey; whilst the black basal sagittiform streak in all the preceding species sends in its centre a hook to the proximal margin, it is absent here and in the following. Canada, United States. — The larva occurs in two colourings: green with orange subdorsal lines, or brown, on the dorsum bluish-grey with yellow subdorsal lines; single dorsal hairs, laterally more densely haired. It lives on willows.

A. ybasis Dyar is a small whitish-grey species, in the marginal area shaded with purple brown up to beyond the middle; the black basal ray is distinct, at the end forked, the discal and anal sagittiform streaks are distinct, too; the undulate anterior transverse line is faded and indistinct, the maculae large, light, with dark rings and pupils; the distinct median line is double at the costal margin. The posterior transverse line is double. Hindwing brownish with a discal spot and traces of a transverse line behind it. Expanse of wings: 29 mm. Mexico.

A. exilis Grt. (= *modica* Sm. & Dyar) (3 c) is a smaller species with narrow wings, the greyish-white forewings tinted somewhat olive; maculae whitish, pupilled reddish, above and below their black bordering is open; the basal sagitta is very indistinct. Hindwing greyish-brown. New York.

A. modica Wkr. (3 c) is similar, larger, more brownish, more intensely strewn with black, the maculae entirely encircled. Hindwing towards the base more yellowish, towards the margin more darkened with darker

veins. United States, to the south as far as Texas. — Larva light brown, watered with blackish, with broad black subdorsal lines above bordered with whitish; the tubercles show one single hair each. It lives on oaks.

- ovata*. **A. ovata** Grt. (3 d) is smaller and very much lighter grey, less brownish; the antemedian is in the centre broadly darkened with a blackish brown; by the reddish-brown reniform macula the species is rather easily recognizable; hindwing light reddish-brown, towards the margin darkened. From New York to Texas, to the west as far as the Rocky Mountains, May till July. — The adult larva is brown with yellow tubercles on which there are single hairs, and with large yellow, later on orange-red spots. It lives on oaks, beeches and walnut-trees.
- haesitata*. **A. haesitata** Grt. (3 d) is much larger than *ovata*, darker bluish-grey with much darker veins; the antemedian line is similarly darkened, the reniform macula not filled up with reddish. Hindwing dark brown. From Canada to Texas and Arizona. — Larva similar to that of the preceding, but without dorsal spots.
- pruni*. **A. pruni** Harr. (= *smithi* Btlr.) (3 d as *hastata*) is a larger light species with entirely the same markings as in *theodora*, but the black streak in the discal area above the submedian fold is absent, and the ground-colour is more brownish. Northern California.
- marmorata*. **A. marmorata** Smith (3 f). The figure reproduces the species just as badly as is the case in the preceding. The ground-colour is a faintly yellowish white in contrast with the black markings by which the species is well discernible from all the others known; the ring-macula is prominently white with a black pupil. Hindwing white with dark veins and a dark-brown marginal line. From California and Montana.
- fragilis*. **A. fragilis** Gn. (= *spectans* Wkr.) (3 e) agrees with *marmorata* in the whitish ground-colour and the sharply contrasting markings; in the inner-marginal half and towards the distal margin there is more intense blackish-brown streaking. Recognizable by its smaller size and the absence of the black sagitta above the proximal angle. Canada to New Jersey, to the west as far as the Mississippi. — Larva green with yellowish-white, interrupted subdorsal lines and a more or less complete brown dorsal line; single black hairs. On birches, ash-trees and apple-trees.
- minella*. **A. minella** Dyar (3 f) is darker and larger than *fragilis*, more brownish-grey intermixed with single ochreous scales, similarly marked, the anterior transverse line very much dentate, without the dark shading behind the postmedian line on the discal and submedian folds; the basal sagitta only extends to the anterior transverse line. Colorado.
- clarescens*. **A. clarescens** Gn. (3 e) has greyish-white forewings strewn with blackish-brownish; especially dark is the basal area except the space between the basal and proximal transverse lines, the two anterior transverse lines are very much less dentate than in *minella*. Hindwing darker brown than in *minella*. — f. **centriferruginea** Strd. are specimens with a reniform macula filled up with rusty brownish. — From Canada to New York. — Larva green or reddish with single dark hairs and a purple brown dorsal stripe expanding on the segments 7 to 10 and being on the thoracic rings laterally bordered with white. It lives on apple, cherry trees etc.
- tristis*. **A. tristis** Sm. The ground-colour of the forewings is a uniform dark ashy grey with exactly the same marking as in the following *inclara*, but without contrasts, slightly relieved against the ground-colour, the light ring of the round ring-macula being the only greater contrast. Hindwing diaphanous white, dusted with blackish, in the ♀ darker. Expanse of wings: 35 to 37 mm. Described from Canada.
- inclara*. **A. inclara** Sm. (3 e) by more intense black streaking, particularly in the basal and postmedian areas appears darker than *clarescens* which it resembles otherwise; particularly very much shaded are the discal and submedian folds behind the distal transverse line. — Larva similar to that of *ovata*, with or also without light dorsal spots. From Canada to Texas, to the west as far as South Dakota and to the foot of the Rocky Mountains, in June and July.
- liturata*. **A. liturata** Sm. (3 d). Greyish-white, in some places tinged brownish and strewn with black; the black basal ray extends beyond the anterior transverse line; the markings are rather blurred, not contrasting; ring-macula purely white with brown pupil. Hindwing white with darker veins and darkened margin. Oregon, Colorado.
- brumosa*. **A. brumosa** Gn. (3 e) is one of the darkest species, very intensely strewn with brown and black, especially in the proximal third of the base and behind the distal transverse line towards the apex. Hindwing in the ♂ white, in the ♀ brownish, the veins darker. Florida, Texas, Colorado. — f. **persuasa** Harv. has lighter hindwings and is perhaps a distinct species.
- velia*. **A. velia** Schs. (3 e, 5 c) is very much like *brumosa*, lighter, particularly in the basal area; the basal ray does not extend beyond the anterior transverse line, and the anal sagittiform ray seems to extend very obliquely to the proximal angle by being very much shaded dark proximally above, distally more towards the proximal margin. Hindwing somewhat darker, the veins still more prominent; especially in the ♀ an undulate postdiscal line is distinct. Mexico to Guatemala. Figure 3 e is of a too bright blue and brown colouring, figure 5 c, however, is correctly coloured.

A. superans *Gn.* (3 e) is much larger, otherwise in the colour and marking very much like the two *superans*. preceding; the area behind the reniform macula is remarkably light; the basal ray is entirely absent, instead of it a darkened nebulous stripe extends along the submedian fold from the base to the margin; the base of the proximal margin is tinted yellowish. Hindwing uniformly brown. From Canada to the south as far as Washington, to the west as far as the Mississippi. — The larva is green with feeble yellowish subdorsal lines and a velvety brown dorsal stripe; the tubercles only exhibit single black hairs. It lives on various fruit-trees, apples, plums etc.; also on birches and ashes.

A. subochrea *Grt.* (3 f) is more uniformly and darker brown than *superans*, without the long nebulous *subochrea*. stripe on the submedian fold and without the light area behind the reniform macula with less distinct markings; the wings are not so broad as in *superans*. Widely distributed from Canada to the south as far as Virginia, to the west as far as the Rocky Mountains. — The larva is green with a darker lateral stripe and a lighter dorsal part with black transverse spots on the 5th, 8th, 9th and 12th rings; the tubercles exhibit several fine, soft, light hairs. It lives on Hamamelis.

A. noctivaga *Grt.* (3 f) is somewhat like a small *brumosa* (3 e) with narrow wings, with very contra- *noctivaga*. stingly black markings on the white ground; of a particularly conspicuous white is the inner-marginal part of the postmedian line. Very widely distributed throughout the United States. — The larva is dull black with a broad reddish subventral stripe and shorter black and longer grey hairs. On poplars and low plants.

A. afflicta *Grt.* (= *dolens* *Drc.*) (3 g) is a remarkably dark species with a contrastingly white ring- *afflicta*. macula. Ground-colour reddish-brown covered with an intensely lustrous greenish black, so that the markings disappear more or less; only the proximal margin of the forewing is somewhat lighter grey. Hindwing white, in the ♀ dark, towards the margin more darkened with brown-striped veins. Canada to Texas, also found in Mexico (Jalapa). — The larva is reddish-brown with a black dorsal stripe, reddish lateral stripes and single black hairs; on oaks.

A. hamamelis *Gn.* (3 f). Greyish-white, dusted with a blackish brown, the maculae but little projec- *hamamelis*. ting from the dark ground, the ring-macula at most with a slight whitish ring. The black basal ray is absent like in *afflicta*. Hindwing brown, at the margin darker with a darker discal spot and an undulate postmedian line. Wide-spread in the United States. — The larva is yellowish-grey, on the ventrum rusty red, both colours separated by a dark green lateral stripe and with 6 green dorsal spots; tubercles with 1 hair each. On Hamamelis virginiana.

A. increta *Morr.* (3 f) is somewhat smaller, with narrower wings, dark grey with a greenish reflection *increta*. and a dark black basal area, the proximal margin of which remains whitish; maculae whitish, filled up with red-brown. The grey hindwings are dusted with red-brown. Canada, New York, New Jersey, Texas, New Mexico. — f. **inconstans** *Sm.* is a lighter form. *inconstans*.

A. retardata *Wkr.* (= *dissecta* *G. & R.*) (3 f) is a very little species with comparatively broadly triangu- *retardata*. lar wings. Forewing grey without a reddish tint, in the discal area more whitish, behind it brown dusting. Hindwing whitish changing to brown. Canada, United States to Virginia. — The larva is whitish, on each ring 5 elaret-coloured transverse bands; the upper tubercles with short, stiff, black hairs, laterally with softer light hair. It lives on maple-trees.

A. fumeola *Dyar* is a very small, purple grey species with subbasal, median and subterminal blackish *fumeola*. nebulous bands between which the black transverse lines are situated the posterior one of which shows whitish dusting. The reniform macula is large with a black ring, proximally somewhat dusted white. Hindwing brownish-grey. Expanse of wings: 23 mm. Mexico.

A. caesarea *Sm.* (3 g) has a whitish ground-colour, dusted with olive-brown, only the discal area *caesarea*. remaining lighter; before the antemedian is a short, black basal ray; maculae small, whitish, strewn with brown, the postmedian band filled up with whitish. Hindwing greyish-brown. United States (New Jersey, Kansas).

A. impleta *Wkr.* (= *luteicoma* *Gr. & R.*) (3 g) is considerably larger than the preceding and with *impleta*. comparatively narrow wings. The ground-colour is a decided reddish brown, in fresh specimens with a yellowish admixture. The postmedian band likewise filled up with whitish, below the submedian fold more intensely so. Hindwing whitish, dusted with a yellowish brown, in the ♀ darker. United States to Texas; Canada. — Larva black with a yellow dorsal line and reddish sublateral lines; light tubercles with light brown hair-tufts, on the 5th ring black, the penultimate ring with 2 black pencils. It lives on species of Prunus, poplars.

A. illita *Sm.* (3 g) resembles a very dark *impleta* without the yellowish tint on the hindwings which *illita*. are somewhat lighter with darker veins. Canada, United States. — The description of the larva does not deviate from the preceding; the food-plants are also the same.

Seet. II. Thorax predominantly covered with hair. (*Triaena* *Hbn.*).

A. quadrata *Grt.* (3 i) is denominated according to a square black spot between the wing-macula *quadrata*. and the reniform macula; the postmedian line is almost straight and below the lower radial but little bent inwards. The ground-colour is whitish-grey, more or less mixed with violettish-brown, particularly in the marginal area;

the black basal ray and the anal submedian ray are very sharply marked. Hindwing white, in the ♀ towards the margin brownish and with a dark postmedian band. Canada, Nebraska, Kansas, also in California.

- strigulata*. **A. strigulata** Sm. (3 i). By the peculiarly bluish-grey colour of the forewing without distinct transverse markings and by the smaller size, this species is easily discernible; the veins are more or less distinctly striped white, between it towards the margin striped black, 3 subapical and 2 anal stripes being more prominent, the upper one being almost connected with a long, black basal ray. Hindwing purely white, in the ♀ towards the margin brownish. Colorado.
- thoracica*. **A. thoracica** Grt. (3 i) has a similar bluish ash-grey ground-colour, but with a yellowish admixture particularly towards the margin, especially easily recognizable by its ochreous centre; the transverse stripes are similarly extinct as in *strigulata*, but the veins not striped white, but dark, particularly in the marginal area; a long black basal ray, in the marginal area 2 subapical resp. anal sagittae; base of proximal margin and the pupil of the reniform macula reddish-yellow. Hindwing whitish, tinted brownish. From New York, New Jersey, Florida.
- laetifica*. **A. laetifica** Sm. (3 g). Forewing almost yellowish-white, strewn with a pale brown, with a long black basal ray, and 2 sagittae in the marginal area. Transverse lines distinct, the maculae connected by a black streak extending into the lower margin of the reniform macula. Hindwing whitish, tinted brownish. From New York, New Jersey, Florida.
- hasta*. **A. hasta** Gn. is closely allied to the following *furcifera* (3 h), but it has a pure grey ground-colour, in some places dusted darker; all the markings are distinct, the slightly S-shaped postmedian band is distally bordered with dark. Hindwing white, in the ♀ darkened. Canada, United States. — f. **telum** Gn. differs but little from typical specimens.
- wanda*. **A. wanda** Buckholz is similar to *laetifica* and *hasta* f. *telum*, but the forewings are as dark as in *tritona* with a contrasting light undulate line. Hindwing light greyish-brown, towards the margin darker. New Jersey.
- manitoba*. **A. manitoba** Sm. (3 i). Greyish-white, densely strewn with blackish, with a distinct black basal ray above edged with white and not crossing the anterior transverse line; the ring-macula ends downward in a point and is connected with the reniform macula by a thick black streak. Marginal area with blackish veins and distinctly prominent sagittae on the discal and submedian fold. Hindwing white, with brown veins, in the ♀ brown. Canada, Colorado.
- furcifera*. **A. furcifera** Gn. (3 h) differs from *manitoba* by its brownish grey ground-colour with a reddish reflection, the hindwings being somewhat darkened, the markings otherwise very similar, also like in *hasta*; the posterior dentate transverse line is white, only distally bordered with black. Widely distributed from Canada to Florida. — The larva is black with light brown tubercles, with small reddish hair-rosettes and a broad red dorsal stripe which is narrowly edged with velvety black from the 3rd to 11th ring. It lives on cherries.
- rapidan*. **A. rapidan** Dyar (3 c) is extraordinarily similar to *furcifera* (3 h) at least according to the fresh specimen I received from Mexico (Tehuacan) and which is reproduced in the figure. Besides I got 2 smaller, very much flown, more yellowish brown specimens with the hindwings dusted with a yellowish-brown and a submedian darkening in the discal area between the transverse lines; though it is not mentioned in DYAR's original description, they are presumably nevertheless *rapidan*. It may be therefore, that also *furcifera* occurs in Mexico which might not be impossible owing to its occurring in Florida. *rapidan* is described from Mexico (Misantla, in May).
- lobeliae*. **A. lobeliae** Gn. (= *grotei* Btlr.) (3 h) is a well-known large species easily recognizable by the 3 very prominent sagittae; the comparatively light grey forewings contrast with the dark hindwings. Widely distributed from Canada to Florida and Texas. — Larva coloured from a slaty grey to black, with greenish white dorsal and subdorsal lines and indistinct lateral and sublateral spots; tubercles above black, laterally with longer white hair. According to DYAR with an interrupted red dorsal line. Food-plant: oak.
- tritona*. **A. tritona** Hbn. (3 h). Forewing densely scaled, bluish or violettish grey, dusted with brownish, with a very distinct basal ray and anal sagitta, the other markings little prominent. Hindwing brownish-grey, towards the margin darker. From Canada to Florida. — Larva yellowish-green with a purple brown dorsal stripe, interrupted on the 6th ring, parted on the 8th to 12th, enclosing an elliptic area of the ground-colour. Tubercles with single long hairs. It lives on species of *Vaccinium* and on *Azalea viscosa*.
- elizabetha*. **A. elizabetha** Sm. (3 i as *elizabetha*) is browner than the most closely allied species with a black basal ray sending in the middle a branch downwards; maculae small, especially the reniform macula is a small, narrow luna. The white hindwings are dusted with brown. From New Jersey.
- falcula*. **A. falcula** Grt. (3 g) is easily recognizable by the dark bluish-grey ground-colour with a distinct black basal streak and reddish dusting in the basal area and in the marginal area. Hindwing white, in the ♀ yellowish, darkened towards the apex. Canada, New York. Larva dark brown, watered with greenish, on the ventrum greenish-white, with a dark dorsal line, tubercles with 1 or 2 hairs; it lives on hazelnut.

A. tartarea Sm. is monotonously deep brownish-grey, almost black, with a velvety black clear marking *tartarea*, resembling the following. Basal ray distinctly black, above white, with a branch downwards; before the posterior transverse a whitish brightening; the line itself submedianly the darkest, the crossing sagitta extends to the margin; undulate line whitish, behind it small black spots; maculae inside scaled white. Hindwing white; at the margin smoky. Expanse of wings: 35 mm. Canada (Alberta).

A. grisea Wkr. (= *pudorata* Morr.) (3 g). Forewing bluish violettish-grey, strewn with brownish; *grisea*, the posterior transverse stripe is sharply dentate on the upper median and lower radial vein. Hindwing whitish, in the ♀ towards the margin brownish. From Canada to the south as far as Georgia, to the west as far as the Mississippi. — The larva is green with a purple brown dorsal stripe, on the 2nd, 5th, and from the 7th to 11th rings expanded, on the latter enclosing a green spot, and with brown lateral spots. On apples, birches, willows, elm-trees and others. — f. **revellata** Sm. (3 i) is larger, with broader wings, more brownish *revellata*, and with a more prominent anal sagittiform spot. From Colorado, Washington.

A. radcliffei Harv. (4 a) is an ashy grey species with a slight reddish tint and clear marking, in the *radcliffei*, marginal area somewhat more whitish; the double anterior transverse line is distinct and rather straight, traversed by the black basal ray; the same is the case with the anal sagitta, whereas the subapical one is absent. The hindwings are white, in the ♀ towards the margin smoky. — In the form **vancouverensis** Strd. also the *vancouverensis*, ♂ has the hindwings suffused with brown like the ♀. Vancouver, Canada, United States to Virginia. — Larva black with a yellow dorsal stripe and 3 lateral stripes, thinly haired; it lives on species of *Prunus*, especially on wild cherries.

A. tota Grt. (4 a) is scarcely to be mixed up with another species; it is smaller and has narrower wings *tota*, than the preceding, darker, dusted with brown and very plainly marked, only the antemedian line is double, the postmedian single, and the marginal sagittae are entirely absent. Hindwing white, in the ♀ smoky. The species is besides distinguished by uncommonly short palpi. The life-history is not yet known. Only found in Texas.

A. funeralis G. & R. (3 i) by the black inner-marginal area of the forewing resembles the European *funeralis*, *A. olni* from which it differs by the absence of the subapical sagitta. The ground-colour is white, more or less brownish-grey, in the marginal area more dusted with a greyish green. At the costal margin between the maculae there is a black spot. Hindwing white, veins brownish, in the ♀ in the whole marginal area. Canada, United States. — The larva is black with rhombiform white dorsal spots parted on the rings 5 to 12 by a black transverse streak; it exhibits single long spatulate lateral hairs like those of *alni*, and lives on apple, birch, elm, and hickory (*Carya*).

A. morula G. & R. (= *ulmi* Harris) (3 h) is a larger species with greyish-white forewings strewn *morula*, with brown; the black basal ray which extends to the mostly rather extinct antemedian line, is towards the proximal margin bordered with reddish-brown. The postmedian line is distally shaded with brown, both sagittae are distinct, also the veins in the marginal area are distinctly darkened. The hindwings are brownish. Canada, United States to Texas. — The larva is dingy brown with a blackish dorsal stripe and elevations on the 5th, 8th and 12th rings. It lives on elms, apple and lime trees.

A. interrupta Gn. (= *occidentalis* G. & R.) (4 a) looks like a small *morula* with narrow wings, without *interrupta*, any yellow in the mesothorax and with a purely ashy-grey ground-colour, not so yellowish; characteristic is the oblique black streak on the inside of the reniform macula. One of the most common species in Canada and the Eastern United States. — Larva reddish or flesh-coloured with a blackish dorsal stripe in which there are square black spots with 2 yellow and 2 red dots. It lives on elms, apple trees etc.

A. spinigera Gn. (= *harveyana* Grt.) (3 k) is very much like *pruni*, but somewhat larger. Forewing *spinigera*, whitish, densely strewn with a brownish grey, marked like *interrupta*, but without the black streak at the reniform macula. Hindwing brownish-grey, in the ♀ darker. United States to Texas.

A. felina Grt. (3 k) is a most characteristic species, dark bluish-grey, strewn with brown, the veins *felina*, still darker, the marginal area likewise very dark, the transverse lines almost extinct, also of the maculae only faint traces; basal ray and the two sagittae well developed. Hindwing white, veins and marginal area brownish. United States to California. — In Canada the much darker form **cyanescens** Hmps. flies, with an entirely extinct *cyanescens*, ring-macula. — f. **metra** Sm. (= *turpis* Sm.) is a very light form very diffusely strewn with dark, almost *metra*, without any transverse markings at all, only with the very fine 3 black rays. Colorado. — f. **amicora** Sm. is *amicora*, yellowish ashy-grey, the black ray behind the reniform macula very distinct; the ring-macula is oblong, oblique, in front pointed. From Arizona. — The larva is whitish or yellowish with red-brown dorsal and narrower lateral stripes, with long and soft white or yellow hair and one black dorsal pencil each on the rings 5, 7, and 12. It lives on poplars.

A. frigida Sm. (= *pacifica* Sm.) (3 k) is dark bluish-grey, densely strewn with black and with *frigida*, darker veins; of the transverse stripes mostly only the posterior one is distinct; the black basal ray is almost

connected with the anal sagitta, the maculae are distinct. Sierra Nevada, California. The larva resembles that of *felina*, but it has thinner and shorter hair and feeds on willows.

similana. **A. similana** Sm. (4 b) is one of the darkest species, purple brown, strewn somewhat whitish, in the discal area mostly somewhat lighter; the veins striped dark; the short basal ray does not reach the anterior transverse line; the maculae are only traceable by blackish dots; the anal sagitta is situated in a dark spot. Hindwing whitish-brown, the veins and marginal area brownish. Described from Illinois.

tonitra. **A. tonitra** Sm. is most similar to *similana*, but it has more smoothly smoke-grey wings, instead of the irregularly strewn ashy-grey of *similana*. The transverse lines have the same course, the distal one is perhaps more strongly dentate, the subanal sagitta more distinct, before it a whitish brightening which may extend for some distance into the discal area. Expanse of wings: 35 to 41 mm. Missouri (St. Louis).

lepusculina. **A. lepusculina** Gn. (4 b) is a large, faintly yellowish-white species dusted with brown, feebly darkened on the veins, without an anterior transverse line; the maculae are only traceable, the posterior transverse line is distally bordered with dark. Hindwing whitish, feebly brownish with darkened veins. United States to New Mexico.

cinderella. **A. cinderella** Sm. (4 a) is very closely allied to *lepusculina*, it has somewhat narrower forewings much more intensely strewn with dark, the posterior transverse line being less strongly dentate and placed very near to the margin. Hindwing like in *lepusculina*. Illinois, Montana, Colorado.

canadensis. **A. canadensis** Sm. (4 a) is much larger, darker, and more bluish-grey; the antemedian is only traceable, the ring-macula entirely absent; the veins are only in the marginal area striped darker. Known only from Canada.

populi. **A. populi** Riley (4 b) has white forewings uniformly strewn with a blackish brown. In the marking the species is very much like *lepusculina*, from which it differs by its broader wings, the entire absence of the ring-macula, and the very short basal ray. Canada, United States. — Larva whitish, with a black head, long white hair, and black hair-pencils on the 5th, 7th and 12th rings and smaller ones on the 8th to 10th. On poplars.

transversata. **A. transversata** Sm. (3 k) is a dark species with narrow wings, the figure of which is much too light, very characteristic by the complete dentate median line, whereas of the anterior transverse line there are only spots to be seen; the marginal area is darkened. Hindwing white, in the ♀ with a brownish marginal area. Only known from Colorado.

chionochoera. **A. chionochoera** Hmps. (4 a) is allied to *lepusculina*, but it has more purely white, chalky forewings, but very scantily strewn with black; the basal ray is longer, the ring-macula small though distinct, also the anal sagitta. Hindwings of a pure white. Canada, United States.

leporina. **A. leporina** L. (= *vulpina* Grt., *saneta* Edw.). This species being also palearctic has been dealt with in Vol. III, p. 14 and figured there on t. 3 a. The American specimens are on an average somewhat more strewn with dark. The species is found in Canada and the United States. — The larva lives, as with us, on poplars, willows, and birches.

moesta. **A. moesta** Dyar, distinguished from *leporina* only by much more intense grey strewing, has of late been regarded as a distinct species. British Columbia.

cretata. **A. cretata** Sm. (4 e) is larger and robuster than the preceding, which it otherwise resembles very much. It is distinguished by its more chalky bluish-white ground-colour with more intense blackish-brown strewing particularly in the inner-marginal half of the discal area and behind the postmedian. Hindwing white with somewhat dark dusted veins, in the ♀ also with a discal spot. Canada, Colorado.

innotata. **A. innotata** Gn. (= *graefti* Grt.) (4 d) resembles dark dusted forms of the preceding species. The white forewings are suffused with brown and strewn with blackish-brown, with plain, partly interrupted transverse lines; basal ray and sagittae entirely absent; the postmedian is more intensely shaded towards the margin. The silvery white hindwing exhibits a small faint discal spot and traces of a transverse line behind it. — f.

griseor. **griseor** Dyar from British Columbia is somewhat larger, more intensely dusted with a brownish black, and with distinct black transverse lines. The typical form is distributed from Canada to Pennsylvania. — The larva is greyish-brown with 2 rows of yellow lateral spots, with whitish hair. It lives on hickory and birches.

betulae. **A. betulae** Riley (4 e) differs from the preceding by its distinct sandy yellowish colour only scantily strewn with dark; the maculae are encircled by a reddish brown, the postmedian being also reddish-brown, proximally bordered with whitish, distally with ochreous-yellowish, the anterior transverse line distinctly double. From New Hampshire to Pennsylvania and Missouri. — Larva brown, flattened, with a lateral row of fringed hair, with dark dorsal tubercles and scanty short hair. It lives on birches.

americana. **A. americana** Harris (= *aericola* Guén.) (4 d) is the largest species and thereby unmistakable. Dark greyish-brown with distinct, sharply dentate, double transverse lines, in the marginal area somewhat darker,

with contrastingly brown hindwings. Canada to Texas. — The whitish larva with double black dorsal and lateral lines with long, light yellow hairs and black peneils on the 5th, 7th and 12th rings, lives on maple. — f. **obscura** *obscura*. *Edw.* is a darker form from Salt Lake City. — f. **eldora** *Sm.* (3 h) in contrast with it is lighter, more greyish- *eldora*. white, suffused with brown, with lighter greyish-brownish hindwings. Colorado.

A. dactylina *Grt.* (4 c) is smaller, more bluish-grey, and above all with entirely white hindwings. *dactylina*. Characteristic is the posterior transverse line being single and only analwards proximally doubled by 1 or 2 black erecents. Canada to Colorado. — Larva black, laterally yellowish, with dorsal reddish brown hair, and long black hair-peneils on the 5th, 7th, and 12th rings; on alders, willows, and birches.

A. insita *Wkr.* (4 e) is much lighter than the preceding, the forewings are white, dusted with light *insita*. brown, the veins darker, otherwise marked very much like *dactylina*, but the postmedian runs differently, returning far to the lower cell-angle. Hindwing white with brownish veins and a smoky marginal area. The ♀ is darker brown. Canada to Colorado. — Larva yellowish with long, soft, yellow hair; on poplars. — f. **denvera** *denvera*. *Sm.* has smoother, yellowish-white, less dusted forewings; from Colorado.

A. hesperida *Sm.* (4 d) resembles *dactylina*, but it is larger and much darker bluish-grey. The hind- *hesperida*. wings are not entirely white, but feebly smoky with darker veins. Canada, United States to California. The larva is black, with short dense hair in the shape of rings, so that the segmental indentations remain broadly bare; above the hair are red-brown, laterally whitish; on the 5th, 7th, and 12th rings one black pencil each. It lives on Alnus.

A. hastulifera *Sm. & Abb.* is also like *dactylina*, but much lighter whitish grey, strewn slightly *hastulifera*. darker, larger than *dactylina* (4 e), with a slightly yellowish tint. The anterior transverse line is quite incomplete, the distal one single, behind it the marginal area darker; the anal sagitta is distinct, but it does not reach to the margin. Hindwing tinted yellowish. The ♀ is mostly much larger, more bluish-grey, the hindwing brownish-grey. Canada to California. — Larva dark brown, with short and dense hair, on the dorsum black mixed with white, laterally red-brown; on Alnus.

A. impressa *Wkr.* (= *fasciata* *Wkr.*, *verillii* *G. & R.*) (4 b). This species and the following are *impressa*. very much alike; both are smaller, dark insects; *impressa* is a somewhat larger species, with broader forewings, at the apex less pointed; it is more distinctly marked, less intensely strewn with black, only in the proximal half, as far as the posterior transverse line at most. The hindwing is generally somewhat darker. Canada, United States. — The velvety black larva sublaterally striped reddish, with short, reddish-brown hair-tufts lives on willows, Prunus, Rubus, Ribes, and species of Corylus. — f. **emaculata** *Sm.* (4 b) is a more bluish- *emaculata*. grey form with lighter, whitish hindwings.

A. distans *Grote* (4 b) is smaller than *impressa* with narrower, more pointed wings; by more intense *distans*. black strewing the marking becomes more indistinct; the black inner-marginal dusting extends to the margin. The hindwing is somewhat lighter; Canada to New York. Larva also like that of *impressa*, but the hair-tufts on the rings 2 to 5 and 12 and 13 are red, the others light yellow. — f. **dolorosa** *Dyar* is a darker form from *dolorosa*. British Columbia.

A. rubricoma *Gn.* (4 c) is more or less tinted yellowish, coarsely strewn with black, most intensely *rubricoma*. in the basal area, near, the reniform macula and behind the postmedian which itself is filled up with whitish. Canada to Texas. — Larva yellowish with a black, partly double dorsal stripe, and white hair-pencils on the rings 6 to 10 and 12. It lives on Celtis.

A. longa *Gn.* (= *xylinoides* *Gn.*, *xyliniformis* *Gn.*, *pallidicoma* *Grt.*) (4 c) is rather variable, greyish- *longa*. white or reddish-grey, more or less strewn with black, at the base of the proximal margin whitish; the antemedian is almost extinct; above the inner-marginal vein there is in the discal area a black streak, between the maculae there is a white spot; the anal sagitta is distinct. Hindwing purely white. Canada to Florida and Texas. — The blackish larva with thick brown, on the 5th ring red hair-tufts lives on low plants.

A. extricata *Grt.* (4 e). Forewing white, densely covered with dark brown, larger than *longa* which *extricata*. it otherwise resembles in the marking. The posterior transverse line is more dentate, a black basal ray is present, and the cell-spaces in the marginal area are striped black. Hindwing semi-diaphanous white. Hitherto only known from Texas.

A. sperata *Grt.* (4 f) is a smaller, brownish ashy-grey species with indistinct dark transverse markings *sperata*. behind which there is a darker part in the discal and distal areas. The brown ring-macula is very small, the reniform macula large, the postmedian proximally bordered with whitish. Hindwing purely white, only at the apex somewhat brownish. — f. **speratina** *Sm.* is larger and lighter, the markings still more blurred. Canada *speratina*. and United States. — The larva is brown, dorsally shaded with blackish, with thick brown hair-tufts, and lives on low plants.

- lithospila*. **A. lithospila** Grt. (4 b) has grey forewings dusted and strewn with brown, the veins marked with black, particularly in the marginal area; the maculae are only traceable as black dots, between both a whitish streak on the discal fold. Both transverse lines are almost entirely absent except traces; the anal sagitta is distinct; between the veins in the marginal area also black streaks. Hindwing semi-diaphanous white with brownish veins and margin. From Canada to Florida and to the Pacific Coast. — The larva is green with a red-brown, yellow-edged dorsal band which is expanded on the rings 6 to 10, and with scanty fine, thin hairs. It lives on chestnut, oak, and other foliage-trees.
- arioch*. **A. arioch** Streck. Forewing yellowish-white, strewn with brown, with 4 black dots in the cell and a row of sagittae instead of the posterior transverse line, besides with faint subterminal patches and a marginal row of round, black, small spots. Hindwing purely white. From *oblinita* (4 f) and *lanceolaria* (4f) easily discernible by the yellowish colour and much less prominent markings. From New Orleans.
- othello*. **A. othello** Sm. (4 e) looks like *longa* from which it chiefly differs by the discal area being blackened below and behind the cell; the basal area is more bluish-grey, the marginal area grey with black-striped veins; both transverse lines distinct, as well as the sagitta. Hindwing white, in the ♀ greyish-brown. Only from California.
- edolata*. **A. edolata** Grt. (4 c) is a much larger and blacker species with long, narrow wings, and in contrast with the preceding, light marked veins; of the anterior transverse line there are only traces, the reniform macula is entirely absent, the posterior transverse line is very deeply dentate, proximally bordered with grey. Hindwing purely white, the veins and the apical marginal area faintly brownish. From Arizona, and in a very large dark form which was figured from Mexico (Zacualpan).
- perdita*. **A. perdita** Grt. (4 c). The bluish-grey ground-colour appears very dark owing to the intense black strewing, especially in the inner-marginal part as far as the discal line; both transverse lines are distinct, behind the posterior one black dusted spots analwards and behind the cell. Hindwing like in *edolata*. From Canada and the United States. — The black larva with black hair-tufts lives on *Alnus*.
- barnesi*. **A. barnesi** Sm. (4 c) is similar, with broader wings, somewhat lighter, more greyish-white, thickly strewn with blackish-brown, recognizable by the black stripe in the proximal part from the base to the discal line, being continued behind the postmedian in the anal fold to the margin, both maculae entirely absent. Hindwing somewhat more yellowish than in the preceding. Hitherto only known from Colorado; taken in June and July.
- oblinita*. **A. oblinita** Abb. & Sm. (= *salicis* Harr.) (4 f) for which GROTE established the genus *Eulonche*, is a very common, greyish-white species very much strewn with black, easily recognizable by the long, pointed forewings with longitudinally striped markings, and purely white hindwings. All the transverse markings are more or less indistinct or extinct. From Canada to Florida. — Larva black with broad yellow lateral stripes and spotted subdorsal lines and red transverse bands, on red tubercles with short reddish-hair. On *Alnus* and low plants.
- lanceolaria*. **A. lanceolaria** Grt. (4 f) has comparatively still longer, narrower wings with almost entirely extinct transverse markings, only the posterior one being visible. The marginal dots which are very distinct in *oblinita*, are here absent altogether. Canada and Massachusetts. — Larva green, dusted blackish in the shape of dorsal and lateral bands, with black hair-tufts on large light tubercles; it lives on low plants.
- insolita*. **A. insolita** Grt. (4 f) differs from the preceding by much darker, blackish-brown forewings hardly dusted with whitish, with rather indistinct transverse lines. Hindwing white, at the costal and distal margins dusted with brownish. Pennsylvania *).

2. Genus: **Merolonche** Grt.

Very similar to the preceding genus, distinguished by the stunted proboscis, porrect palpi, smaller eyes, in the ♂ bi-combed antennae with a serrate end, and on the hindwing the uppermost radial not being forked with the subcostal vein. But few species are known, which easily become greasy in the collection.

- lupini*. **M. lupini** Grt. (4 f) has bluish-grey forewings strewn with black, and dusted with brown except the basal area, thereby becoming slightly yellowish in contrast with the other species. All the usual markings are rather distinctly present. The whitish hindwings are dusted with darker veins, traces of a discal spot, and a transverse line behind it. Only from California.

- spinea*. **M. spinea** Grt. (4 g) has more violettish-grey wings being but little dusted with brown, with very indistinct maculae, a very prominent brown discal shade which is on the submedian fold accompanied by a

*) *A. gasta* Streck. is probably to be considered as a dark specimen of the European *megacephala* F. which, somehow or other, was presumably imported and taken in New Orleans, but does not occur elsewhere in America.

blackish stripe; the transverse lines are both rather distinct. The hindwing is much darker than in the preceding. California.

M. ursina Sm. (4 f) looks much darker bluish-grey than the similar *lupini*, with narrower, more *ursina*. pointed wings and a quadrangular thorax, being much hairier and the markings much more indistinct owing to the very profuse dark dusting, and particularly little is to be seen of the median line. The hindwings are lighter. Canada, Colorado, and California.

M. dolli B. & McD. (5 c) in its exterior resembles *A. distans* Grote (4 b), but the stunted proboscis *dolli*. and coarse hairing place it to *Merolonche*. Forewing dark grey, shaded with black, particularly the discal area is broadly blackish with an oblique light costal spot extending between the maculae to the posterior transverse line; both lines double, strongly dentate, filled up with whitish, the maculae rather inconspicuous. Hindwing of a dull brownish-grey with whitish fringes. Expanse of wings: 37 mm. New York.

3. Genus: **Simyra** O.

Another small group of species with a stunted proboscis being chiefly represented in the Old World (vid. Vol. III, p. 12). From the preceding genus it differs by the hairy thorax without any admixture of scales and the coarsely haired abdomen without tufts, but with lateral hair. The antennae of the American species are neither combed nor ciliated, but scaled.

S. henrici Grt. (4 g) has whitish wings dusted with red-brown, the veins in the marginal area darkened, *henrici*. a similar stripe from the centre of the cell to the margin, a subapical and a submedian basal ray. Hindwing silvery white. Canada, United States to New Mexico, and in Cuba. The larva is black with yellow dots, yellow subdorsal and sublateral lines, with red, light-haired tubercles, on grasses. — In f. **evanida** Grt. the ground-colour *evanida*. is more yellowish, the longitudinal stripes die away, whereas f. **fumosa** Morr. is darkened and exhibits a more *fumosa*. slaty-grey ground-colour.

S. unifacta Dyar (5 d) is pale straw-coloured, uniformly and finely strewn with brown, with lighter, *unifacta*. more prominent veins and fine, darker longitudinal stripes in the centre of the wing. Hindwing yellowish-white. Expanse of wings: 38 mm. Mexico (Misantla) in June.

4. Genus: **Harrisimemna** Grt.

Proboscis developed, palpi obliquely erect and anteriorly haired, the antennae of the only American species in the ♂ with short pinnae. Thorax scaled, on the metathorax a large tuft of long spatulate scales; abdomen on each segment tufted, the largest tuft on the 4th segment. Veins not different from the general type.

H. trisignata Wkr. (= *sexguttata* Harr.) (4 g) is at once discernible by the 3 round, dark brown *trisignata*. spots on the silvery white forewings being irregularly marked black. From Canada and the United States to Missouri. — Larva blackish-brown, on the segments 3, 4, and 8 to 10 mixed with whitish, with tufts of short whitish hair on large black tubercles; rings 5 and 6, and particularly the 12th, are raised. The larva is peculiar for collecting the heads of the cast skins on the hairs of the neck-shield and to carry them about piled up, like the larvae of the *Nolidae* do. It lives on Ilex, lilac, and other plants.

5. Genus: **Cerma** Hbn.

Distinguished by the last palpal joint being somewhat longer, the palpi being not haired, but only scaled. Antennae ciliated, metathorax with a loose tuft, abdomen like in the preceding. Veins not different. The American authors consider the difference of the length of the palpi to be too insignificant as to maintain the genus *Bryophila* with somewhat longer palpi.

C. cora Hbn. (= *festa* Gn.) (5 c). Head white, thorax olive-brown mixed with red-brown, the hair- *cora*. tuft on the 4th abdominal segment likewise red-brown, the others black. Forewing olive-brown, in the discal area and at the base bluish-white, with undulate white transverse lines filled up with white. The light hindwings are tinted brown. Canada and United States to Georgia.

C. flavidior B. & McD. (5 d) in the marking entirely resembles *C. fascia* (4 g), but it has an orange *flavidior*. basal and marginal area, and proves to be a distinct species owing to its shorter palpi only extending to the centre of the frons. Described from Nevada.

- oaklandiae*. **C. oaklandiae** B. & Mc. D. (5 d) is also very similar to *fascia*, it is smaller, neater, but more indistinctly marked, and the basal and marginal areas are not contrasting by a lighter colour. The hindwing is darker smoky with an oval discal spot, not a small crescent. From Oakland (California).
- nana*. **C. nana** B. & McD. (5 d) is the smallest species with a light ochreous ground of the forewing, in the discal and marginal areas strewn somewhat with brown, with dark costal spots; the maculae are encircled with orange, the anterior transverse line is proximally, the posterior line distally bordered with orange, whereby it is easily discernible. Hindwing brownish. Expanse of wings: 19 mm. Described from California.
- sarepta*. **C. sarepta** Barnes (5 d) has bronze-brown forewings with light green basal and postmedian areas, as well as a reniform macula. Hindwing brownish-grey. From Arizona.
- fascia*. **C. fascia** Sm. (4 g) has a white head and thorax, and on its olive yellowish ground it is dusted with blackish brown at the base and in the discal area as well as in two spots in the marginal area behind the cell and analwards; the maculae are large and encircled by white. Hindwings dusted with brown. The ♀ is darker with much more indistinct markings.
- marina*. **C. marina** Sm. Forewing brownish-grey, intermixed with black and amethystine scales, in the discal area darker, both the maculae large, strewn with green — like the shoulder-covers —, the transverse lines grey bordered with black. Hindwings whitish-grey. Expanse of wings: 26 mm. Arizona.
- cuerva*. **C. cuerva** Barnes (5 d) has dark brown wings strewn with olive-green, black, and white. Transverse lines black, dentate, the posterior line distally bordered with white; the maculae are only traceable by black scales. Fringes speckled white and brown. Hindwing brownish-grey with a dark discal spot and posterior transverse line. Canada, United States to California.
- albipuncta*. **C. albipuncta** B. & McD. (5 d) is somewhat like *marina*, but it has no green in the maculae and is well recognizable by the invariably white reniform macula and more strongly combed antennae. The ground-colour is a deep sepia-brown, strewn with grey and olive, in the marginal area somewhat lighter. The transverse lines are black, dentate, bordered with whitish. Hindwing dark smoky grey. Described from California (S. Diego).
- olivacea*. **C. olivacea** Sm. (5 e). The whitish forewing is thickly strewn with blackish brown and intermixed with single orange-red scales; maculae and transverse lines black, encircled and bordered with whitish. Hindwing whitish, dusted with brown, in the marginal area darker. From Colorado and California.
- galva*. **C. galva** Streck. is said to look very much like *Acronycta fragilis* (3 e). White, on the forewing strewn with black, the maculae and transverse lines distinctly marked black, the fringes speckled white. Hindwing with a grey marginal area, discal spot and transverse line behind it. Expanse of wings: 28 mm. From New York.
- pallida*. **C. pallida** B. & Lindsey is not allied to any of the other species, the most closely allied it is apparently to *galva*. Forewing yellowish-white with black transverse lines, behind the anterior line and at the most distal basal area strewn with brown; ring-macula oval, reniform macula very long, strongly bent; at the distal margin between the veins black diffuse sagittae. Described from Arizona. Expanse of wings: 27½ to 30 mm.
- canoa*. **C. canoa** Barnes (5 e) has been placed by HAMPSON to the genus *Namangana*. On the grey forewing strewn with blackish-brown, the lines and maculae are prominently whitish; fringes speckled grey and white. Hindwing dark brown. Described from Arizona.

6. Genus: **Metachrostis** Hbn.

This genus being better known as *Bryophila* Tr. contains but 1 American species distinguished from the preceding only by its longer palpi. The abdomen is only tufted on the first rings.

- semifascia*. **M. semifascia** Sm. (4 g) is light reddish-brown, strewn with whitish, well recognizable by a white spot in the proximal half of the discal area; the transverse lines are blackish, the anterior line proximally, the posterior distally bordered with grey, the maculae indistinctly encircled with grey. Hindwing white, on the veins and border dusted with brown. Only known from Colorado.

7. Genus: **Polygrammate** Hbn.

Proboscis developed; palpi slender, obliquely rising; the frons exhibits a transverse ridge in the centre, below it a horny plate; antennae plain, not ciliated. Thorax smoothly scaled, without tufts, only one on the 1st abdominal ring. The veins do not differ from the usual scheme. Only one species:

- hebraicum*. **P. hebraicum** Hbn. (5 e) on its silvery white wings shows scanty, distinct, black markings. Hindwing yellowish-white, dusted with brown, towards the margin darker. United States from Massachusetts to Florida

and Texas. Larva somewhat flattened, grey or red with yellowish subdorsal lines and many yellow spots; on *Nyssa sylvatica*, the Tupelo-tree.

8. Genus: **Leuconycta** *Hmps.*

Very similar to the preceding, distinguished by the frons lacking the horny plate, ciliated antennae, the thorax intermixed with hair and with loose tufts.

L. diptheroides *Gn.* (5 f) is light green, strewn with white, with fine black transverse lines and maculae; *diptheroides*. conspicuous are a small black triangular spot near the base of the costal margin, and a large one from the costal margin entering into the maculae. Hindwing dusted with brownish with a central spot and traces of postmedian and subterminal lines. — In the form **obliterata** *Grt.* the black borderings of the posterior transverse *obliterata*. line and of the marginal lines are extinct. Canada, United States. — Larva green with white dorsal and subdorsal lines and with a reddish stigmatal being below bordered with white, with single fine hairs on the partly white-dotted tubercles.

L. vesta *Schs.* (5 e) is silvery white, in some places dusted with red-brown, with very fine dark markings *vesta*. a black spot between the maculae and at the costal beginning of the postmedian line with a black triangular spot; fringes speckled white and brownish. Hindwing reddish-brown. From Mexico.

9. Genus: **Centrochlora** *Dyar.*

Distinguished from the preceding by its smooth frons, short, straight, porrect palpi, rough-haired and scaled thorax without tufts, from the following by short anterior tibiae with a spine on the inside. Only 1 species:

C. esmeralda *Dyar* (5 e) is a wonderful, dark green species marked white and black, also the hind- *esmeralda*. wings are intensely green. Mexico (City), taken in July.

10. Genus: **Agriopodes** *Hmps.*

Proboscis developed, palpi erect, extending to the centre of the frons, somewhat hairy. Antennae ciliated. Thorax covered with rough scales, without a tuft; abdomen at the base roughly haired, with a large dorsal tuft. Tibiae hairy. Several pretty greenish species.

A. fallax *H.-Schäff.* (5 e) is emerald-green with a white costal margin and black, spotted markings, *fallax*. below which a triangular spot is particularly prominent analwards in the postmedian; subterminal line whitish, otherwise the marginal area is vacant, only the fringes are crossed by black. Canada to Texas. — The velvety green larva with narrow white dorsal and subdorsal lines exhibits on the tubercles numerous, very fine, short hairs and lives on the snowball-tree.

A. geminata *Sm.* (5 f) differs from *fallax* by the malachite-green wings being intermixed with white *geminata*. and black, with a much smaller subanal black triangular spot; the subterminal area shows black sagittae. From Canada.

A. tybo *Barnes* (5 e) is light bluish-green, scantily strewn with black, with more coherent, finer *tybo*. black markings, transverse lines and maculae, the latter being large, finely surrounded with black; the subanal black triangular spot is entirely absent. Fringes speckled white and black. Hindwing dusted with brownish-grey, with traces of a discal spot and postmedian line. Arizona.

A. viridata *Harv.* (5 f) is very similar, smaller, separable by a very distinct, blackish discal shade and *viridata*. similar extensive dusting in the postmedian area. Hindwing lighter, almost white, with a black discal spot and 2 postmedian lines, and a black marginal lunular line. California.

A. jucundella *Dyar* is a very small species; forewing light green with black triangular spots at the *jucundella*. costal margin at the base, at the apex and anal angle; along the costal margin and at the distal margin in its centre there are besides small, black streaks; the other transverse markings are only represented by irregular, narrow, white, small strigae. Hindwing light grey, at the margin darker. Fringes whitish. Expanse of wings: 15 mm. Porto Rico, September. — The larva, according to G. N. WOLCOTT, lives on lichens and by the colouring being the same as the latter it offers an excellent example for protective colouring.

A. lepidula *Grt.* (10 a) on its emerald-green ground is dusted with red-brown in the basal half of *lepidula*. the costal margin, in the discal area and in the centre of the postmedian area; transverse lines and maculae marked white, the former being double, finely bordered with black. Hindwing whitish, dusted with red-brown. Canada to Colorado. — f. **avirida** *Sm.* (5 g) is not green, but greyish-white, strewn with dark brown; it occurs *avirida*, in the same range.

teratophora. **A. teratophora** H.-Schäff. (= *inscripta* Wkr.) (5 f) has been placed to the genus *Amyna* (Erastrinae) by HAMPSON, but it probably belongs hereto. Dark brown, dusted with grey; anterior transverse line indistinct, doubly undulate, the posterior line single, dentate, with white dots behind it on the veins; the small, round ring-macula is surrounded with single white scales, the reniform macula is white, surrounded and strewn with black. Hindwing dusted with brown. Canada to Florida and Texas.

*cortico*s. **A. corticosa** Gn. was described as a „*Bryophila*“ by GUENÉE and compared with *Metachrostis muralis* Forst. (Vol. III, t. 4 f). The abridged description runs as follows: shape of (*Bryophila*) *glandifera*; wings whitish-grey, speckled with light brown and black, all the lines black. Basal area of white-green colour, the demi-line and at the spot of the proximal margin black. Discal area greyish-brown, slightly mixed with yellowish-brown; marginal area white, spotted brown. Submarginal line very black, very much undulate, the fringes whitish, pierced by black rays, of a dull pearl-white colour; at the proximal angle a black shade almost to the centre. Abdomen beneath white. Body rather strong, antennae long. South America.

Additions to the subordinate group **Mominae**.

As the first part of the *Acronyctinae*, the *Mominae*, was already printed since 1919, we must, in order not to be too backward, add hereto two more genera belonging to this group.

7. Genus: **Zazunga** Dyar.

Antennae in both sexes short and thick, flattened, the joints on both surfaces with a double impression, smooth, not ciliated. On the forewing the middle radial rises close at the lower; the lower subcostal vein rises just before the end of the accessory cell, the two next ones bifurcate from the end of that cell. On the hindwing the upper median vein rises on a short fork with the lower radial just like the upper radial vein with the subcostal, whereas the middle radial originates near the lower cell-angle. The legs are long-haired, without spines; frons smooth; palpi obliquely rising; thorax clad with long, hair-like scales, abdomen not tufted.

opinor. **Z. opinor** Dyar (5 c). Bluish-grey, transverse lines blackish, feeble. The ring-macula in a whitish ring, finely encircled and pupilled with black, with a similarly pupilled ring below it; the dark, faded discal shade touches the large reniform macula which is similarly marked; the postmedian line is a whitish shade with black dots on the veins just like the subterminal line, with a black anal sagitta. Hindwing white. Antennae ochreous. Expanse of wings: 35 to 38 mm. From Mexico (Zacualpan, Orizaba).

zetacelis. **Z. zetacelis** Dyar is thinly scaled, light grey with darker veins, with a darker shade in the inner-marginal half; transverse lines faint, dark; ring-macula a black ring with a yellowish, black-pupilled spot below it; the reniform macula is filled up with light yellowish, with a black zigzag line in the centre; the posterior transverse lines like in *opinor*, but the anal sagitta is absent. Hindwing semi-diaphanous grey. Expanse of wings: 38 mm. Mexico (Jalapa).

moës. **Z. moës** Dyar. Here the grey forewing is somewhat strewn with black; the antemedian line is light, from the costal margin to the median distally and from there to the proximal margin proximally bordered with black, in this latter course distally dislocated. The ring-macula is an unpupilled black ring, the reniform macula is light, in the centre almost white, very large, indistinctly bordered with black, instead of the coniform macula a light spot strewn with red-brown. The light postmedian line is dentate, the subterminal line likewise dentate, analwards proximally bordered with black. Hindwing white, towards the apex hued somewhat grey. Expanse of wings: 35 mm. Described from Arizona (Washington Mountain).

8. Genus: **Trichocosmia** Grt.

This small genus which HAMPSON inserts in his large *Acronyctine*-family belongs yet hereto owing to the finely haired eyes and the strong middle radial of the hindwing rising distinctly nearer at the lower branch. Proboscis developed, palpi of medium length, obliquely ascending, anteriorly haired. Frons with a faint, rounded projection and a horny plate below it. ♂ antennae ciliated; thorax clad with scales and hairs, behind with a loose tuft.

inornata. **T. inornata** Grt. (5 c). Whitish, dusted with red-brown; the undulate transverse lines reddish-brown, on the averted sides bordered with white, the subterminal line similar; the reniform macula represented by a small dark spot in the lower cell-angle, which is absent in the form **demacula** Strd. Hindwings of a pure white. Known from Arizona.

drasteroides. **T. drasteroides** Sm. (5 c), originally described as *Caradrina*, is larger, of a yellowish white, scantily strewn with black, in the marginal half greyer. Of the transverse lines only the posterior is more distinct,

bordered with white, the anterior line is only traceable by black scales, the maculae are absent except the reniform macula being represented by a darkened patch; subterminal line whitish, proximally shaded dark. Hindwing white, sometimes with a black discal spot. South California and Arizona.

Subordinate Family: Agrotinae (recte: Phalaeninae).

It comprises those Noctuids of the so-called „trifid“ group, i. e. with a more or less stunted middle radial of the hindwing, which exhibit spined middle and posterior tibiae, or also only spined posterior tibiae. According to the succession observed in the other faunae, the „*Heliothinae*“ belonging hereto were left out only in order not to disturb the uniformity of the work. The genera, moreover, are all of a rather uniform structure; particularly important for the distinction of the genera is the shape of the frons forming various protuberances or horny projections, often besides with horny plates below them. According to the international nomenclatural rules, the „owls“ must be called *Phalaenidae* instead of *Noctuae*, the first family containing the *Phalaena typica* consequently *Phalaeninae*. At this place we beg to express our particular thanks to Mr. W. SCHAUS at Washington and Mr. FOSTER H. BENJAMIN at Decatur without whose help and aid it would have been impossible to carry out such a complete elaboration of the „owls“.

1. Genus: **Agrotiphila** Grt.

Proboscis developed; the short, long-haired palpi are erect; frons smooth, rounded; eyes small, bean-shaped. The body is clad with scales and rough hair. In the veins there is, as in almost all the genera, no difference worth mentioning. According to the shape of the antennae, 2 subordinate genera have been denominated: the first with serrate and tuftedly ciliated antennae, *Schöyenia Auriv.*, containing the sole species *quieta*, whilst the other species have plainly ciliated antennae and form the typical genus *sensu stricto*. The species having hitherto been described mostly inhabit the arctic north.

A. *quieta* Hbn. (= *schoenherri* Zett., *constricta* Wkr., *rigida* Wkr.) (Vol. III, t. 50 a). This small, *quieta*. grey species, dusted with blackish, the transverse lines and maculae bordered with whitish, and a black cell between them, has been dealt with in Vol. III, p. 251. It occurs, beside Northern Europe, also in Arctic America.

A. *alaskae* Grt. (5 f) has broader wings than *quieta*, and shows a browner tint, the discal area darkened, *alaskae*. the maculae and transverse lines bordered with whitish, behind the posterior line somewhat more reddish, and with a white longitudinal stripe on the submedian fold. Hindwing yellowish-white, the margin darkened by a greyish brown. From Alaska.

A. *staudingeri* Mschlr. (5 g), of which the form *ottonis* Alph. (Vol. III, t. 48 d) occurs in the pale- *staudingeri*. arctic region, is without the white submedian stripe, of a lighter whitish grey, in some places dusted with olive-brown and strewn with dark brown. The transverse lines are bordered with black, not whitish, the triangular ring-macula is above open. The hindwings are blackish-brown with white fringes. From Canada and Labrador to the alpine districts of Colorado and New Mexico at altitudes of 12 to 13 000 ft.

A. *maculata* Smith is greyish-white, strewn with black, with a darkened discal area. The cell before, *maculata*. between and behind the small maculae is black, the maculae themselves grey; transverse lines single, dentate, black. Hindwing brownish-black. Expanse of wings: 36 mm. British Columbia.

A. *colorado* Sm. has a more olive-yellowish or yellowish-brown ground-colour with distinctly white- *colorado*. striped veins; also the transverse lines are partly bordered with whitish, as well as the large maculae; a black basal ray is above bordered with white. The blackish hindwings exhibit white fringes. Expanse of wings: 29 to 31 mm. Described from Colorado.

A. *kyune* Barnes (5 g) is a remarkable insect quite different from the other species. Ground-colour *kyune*. dark purple brown, behind the distal transverse line sharply contrasting light orange-brown. The transverse lines are single, of a deep black like the space between the somewhat lighter maculae. Hindwings brownish-grey. Described according to a ♀ from Arizona (Huachuca Mts.).

2. Genus: **Barrovia** B. & McD.

The only representative of this genus has hitherto been regarded as a Geometrid (*Larentiinae*) and placed beside *frigidaria*. It is very closely allied to the preceding genus and chiefly differs by the antennae being provided with strong lamellae and the pure hairy cover of the body.

B. *fasciata* Skinner (20 k). Forewing dull smoky brown with more or less violet reflection, in the *fasciata*. discal area darker, often tinted reddish with single transverse lines, and without a ring-macula; the reniform macula is a small, light spot at the cell-end, which may also be absent; the broad, faded undulate line extends parallel to the distal margin, in the marginal area the veins are somewhat darkened. Hindwing white, on the veins and at the margin darkened. Arctic America, flying in the Tundra in bright sunshine.

3. Genus: **Parabarrovia** *Gibs.*

It likewise agrees in the character with the first section of the genus *Agrotiphila* (*Schöyenina*), but it has unspined anterior tibiae, and the upper median and lower radial of the hindwing are forked. Only 1 species:
keelei. **P. keelei** *Gibs.* (21 i). Hairing of body black mixed with silvery grey, the wings diaphanous brownish, the forewing darker with a whitish strewn discal area and costal margin towards the apex; costal hairing yellowish; the veins are darker brownish, the transverse vein scaled black. The ♀ is larger and stouter with traces of a darker median band. Arctic Canada (North Western Territory, Twitya River) in July.

4. Genus: **Orosagrotis** *Hmps.*

Distinguished from *Agrotiphila* by a conical, stunted projection on the frons. The male antennae are serrate and tuftedly ciliated. Only 2 American species.

incognita. **O. incognita** *Sm.* (5 g) is a small, greyish-brown species with an olive tint, black transverse lines, small greyish-brown maculae and between them a darkened cell; the longish ring-macula is obliquely situate and above open; the subterminal line consists of minute black sagittae. Hindwing yellowish-brown with a discal spot and transverse line behind it. British Columbia, Colorado.

montana. **O. montana** *Morr.* (= *rigida* *Sm.*) (5 g) differs from the preceding by its smaller size, the transverse stripes being bordered with whitish on the averted sides, and above all by a white patch from the coniform macula to the posterior transverse line; the ring-macula is round and small; the area behind the postmedian line is dusted with a lighter grey. Hindwing darker with white fringes. Colorado.

5. Genus: **Mesembreuxoa** *Hmps.*

Recognizable by the longer palpi with a porrect last joint, larger round eyes, and by the conical frontal projection which in the centre exhibits a vertical horny projection. The male antennae show long, double pinnae. The thorax is beside the rough hair clad also with scales.

chilensis. **M. chilensis** *Hmps.* (5 g) has reddish-brown forewings with darker strewing which forms a dark longitudinal band above the inner-marginal vein; transverse lines sharply dentate, the anterior one double, filled up with whitish or distally bordered with whitish, in the marginal area with black sagittae; maculae small, light in a somewhat darker ground. Hindwing brownish, towards the margin darker. From Chile (Coquimbo).

melanopsis. **M. melanopsis** *Dyar* (5 g) is larger, lighter grey, the transverse lines single, finely dentate black without a marginal line, but instead with black and white dotting on the veins. Ring-macula elliptic, pupilled black, reniform macula very large, distally concave with a black moon-line in the centre and black shading in the lower end. Hindwing dirty whitish with darker veins. Mexico.

exsiccata. **M. exsiccata** *Dyar* is uniformly dark grey; proximal transverse line double, feeble, the distal one represented by black, distally white dots; reniform macula large, black; no ring-macula; coniform macula traceable; black marginal dots. Hindwing in the basal area whitish, with grey veins, in the marginal area broad dark grey. Expanse of wings: 35 mm. Mexico (City).

fascicola. **M. fascicola** *Dyar* is larger, light grey, subcostally as far as the reniform macula ochreous with pink dusting; the proximal lines are absent, the bent distal, dentate line is only traceable; at the costal margin a subapical, dark grey, round spot; the median veins in the marginal area whitish. The maculae are light, connected by a broad, black band enclosing the ring-macula in the lower part. Hindwing semi-diaphanous white, at the costal margin grey. Expanse of wings: 38 mm. Peru.

6. Genus: **Tripseuxoa** *Hmps.*

Distinguished from the preceding by its stunted proboscis, plain conical frontal projection without a longitudinal ridge, the thorax only haired without scales. 1 species:

strigata. **T. strigata** *Hmps.* (5 g). Ochreous-grey, strewn blackish with black veins, a marginal row of dots, and mostly also one in the centre of the cell. Hindwing yellowish white. Argentina.

7. Genus: **Stenagrotis** *Hmps.*

Proboscis developed, palpi very long-haired, with a long last joint. Eyes with long cilia; ♂ antennae plain, ciliated. Otherwise like the preceding.

edmondsi. **St. edmondsi** *Btlr.* (5 h). Forewing brownish-grey, the transverse lines only traceable by single black scales. Hindwing brownish-white. Chile.

8. Genus: **Porosagrotis** Sm.

Proboscis developed; the erect palpi are short, in front hairy, the conical projection of the frons has a „ring-wall“ like edge above. The male antennae are pinnate or serrate, with tufts of cilia; anterior tibiae with very short spines.

P. daedalus Sm. (5 h). Greyish-white, between the darker veins striped yellowish and reddish-brown, *daedalus*. with quite extinct transverse lines; the long conical macula encircled with black, ring-macula and reniform macula confluent, with whitish rings and dark pupils; an antemarginal row of dark sagittae, and 2 veins marked white. Hindwing whitish, dusted with brown, fringes white. Colorado.

P. dolli Grt. (5 h) is whitish, dusted with brown and strewn with black, with very small, white- *dolli*. marked maculae, and in the marginal area with dark sagittae on whitish specks. No transverse lines at all. Hindwing white, dusted with brownish, and with darker veins. Described from Arizona.

P. longidens Sm. (5 h). Brownish-ochreous, with darker veins; costal margin, folds, cells, and a stripe *longidens*. above the lower median vein dark brown. Ring-macula oblong, oblique, with a black continuation towards the base; the veins in the marginal area marked with yellowish sagittae. Hindwing white. Colorado, New Mexico.

P. patula Wkr. (= septentrionalis *Mschlr.*) (5 h) is brownish-grey with a slight purple reflection, with *patula*. single, dentate, blackish transverse lines and maculae, and blackish diffuse marginal sagittae. Hindwing somewhat lighter brown. From Labrador and the Rockies, occurring also in Liberia (vid. Vol. III, p. 26, t. 5 g).

P. milleri Grt. (5 i) is rather different; forewing light grey, strewn with black and striped pinkish- *milleri*. yellowish on the folds, with a black basal ray, the black, dentate transverse lines close together, particularly at the proximal margin, between them with grey strewn maculae surrounded with black, the distal one of which is bordering on the postmedian line; undulate line black, irregularly dentate; fringes speckled. Hindwing dark brown with white fringes. From California (Sierra Nevada).

P. orthogonia Morr. (5 h, i) has yellowish-white forewings strewn with a dark brown, with a white- *orthogonia*. marked median and inner-marginal vein in the discal area, whitish dentate transverse lines and subterminal line, behind the latter darkened. The maculae are encircled with whitish, marked black and pupilled brownish-grey. Hindwing white, with brown veins. United States to New Mexico and Arizona. — f. **delorata** Sm. from *delorata*. Canada (Alberta) is darker with a slight greenish tint and darkened hindwings.

P. vetusta Wkr. (= muraenula Grt. & R.) (5 i) is a very light lilac-grey species scantily strewn *vetusta*. with brown; the proximal transverse line is only indistinctly double, the posterior one single, sharply dentate, with white dots on the veins; maculae small, marked black. Hindwing white with brown veins, costal margin and distal margin. Canada to Colorado. — f. **catenuloides** Sm. has a more yellowish-white ground-colour, from *catenuloides*. the Rocky Mountains and the Western States.

P. gypaetina Gn. (= pseudopleetra Snell.) (5 i). Forewing blackish-brown with a yellowish-white *gypaetina*. costal-marginal streak as far as the posterior transverse line, the veins therein striped dark; the anterior transverse line double, the posterior single, distally bordered with a lighter shade; coniform macula long, encircled with black, the two other maculae encircled with light in the black cell; in the marginal area black and ochreous-yellowish sagittae. Hindwing yellowish-white, towards the margin brownish, in the ♀ much darker. Uruguay and Argentina.

P. brachystria Hmps. (5 i) is very much like *gypaetina* but much darker brown, dusted somewhat *brachystria*. grey, and without the ochreous costal-marginal streak; the two upper maculae surrounded with black in the black cell; behind the reniform macula two black stripes to the dentate postmedian line which is double like the anterior transverse line. Hindwing light brown, in the disc whitish. Argentina.

P. scortea Schs. (6 a). Forewing greyish-brown with grey and black strewn veins. Maculae ringed *scortea*. and strewn with whitish; anterior transverse line only traceable, the fine posterior one dentate. Hindwing semi-diaphanous whitish, towards the margin brownish, with brown veins. Mexico (Orizaba).

P. peruviana Hmps. has brown forewings mixed with yellowish-white, dark striped veins and folds, *peruviana*. and a black basal ray; the black transverse lines inclusive of a median line plain, undulately dentate, the large 3 maculae encircled with black, the ring-macula distally prolonged; in the marginal area whitish sagittae proximally bordered with black. Hindwing white with brownish veins. — f. **hampsoni** (= ab. 1 Hmps.) has a *hampsoni*. black streak connecting the coniform macula with the posterior transverse line, and darker brown hindwings. Expanse of wings: 32 mm. South East Peru (Aqualani).

P. propriens Dyar is loamy yellow, dusted with grey; ring-macula large, oblong, reniform macula *propriens*. encircled with light, pupilled dark, the cell before and between it black, behind it with a black stripe; the

coniform macula large, grey, encircled with black. The proximal transverse line is extinct, the distal one dentate, light; in the marginal area black sagittae, proximally bordered with light. Hindwing diaphanous grey. Expanse of wings: 30 mm. Peru.

camalpa. **P. camalpa** Dyar. Forewing purple grey, in the basal area lighter grey; the light proximal transverse line is straight, bordered with blackish and forms 3 flat bows; the ring-macula is large, pear-shaped, grey, the reniform macula likewise light, pupilled darker, the cell between them darkened; the distal transverse line is light, proximally darker; undulate line irregular, proximally dark. Hindwing grey with lighter fringes. Expanse of wings: 31 mm. Mexico (City).

9. Genus: **Euxoa** Hbn.

Chiefly distinguished from the preceding genus by the much longer and more slender spines of the anterior tibiae; the thorax exhibits in front and behind loose tufts. The male antennae show longer or shorter pinnae. This genus contains an immense number of species, in the arrangement of which we mainly follow the excellent studies by BARNES and MC DUNNOUGH who have greatly improved HAMPSON's catalogue and cleared up the synonymy which had been extraordinarily complicated. As to the genus compare besides Vol. III, p. 23, and Vol. XI, p. 46.

faticana. **E. faticana** Stgr. is said to be entirely like the European *fatidica* (Vol. III, t. 5 c); it is somewhat smaller, equally coloured and marked, and shows the following differences: of the transverse lines only the postmedian is rudimentarily present and is situate closer at the reniform macula; a black basal ray is connected with the coniform macula; the marginal dots are absent, instead there are short, black, small internerval stripes in the marginal area; veins fine dark, bordered with a light grey; fringes darker. Hindwing somewhat lighter. According to 1 ♂ from Huallatani (Bolivia: La Paz).

schausi. **E. schausi** sp. nov. (13 g, h) is a larger, beautiful insect which is likewise somewhat similar to *fatidica* (Vol. III, t. 5 c), with short-pinnate, in the apical third serrate antennae with ciliary tufts. Greyish-brown with a light purple reflection and dark brown markings, in the discal area below the cell, behind the reniform macula, and in the marginal area darkened; the transverse lines are double, the posterior one on the veins pointedly extended; ring-macula oblique oval, above open, coherent with the somewhat lighter costal part, the reniform macula very large, reniform, traversing the lower cell-end, beneath pupilled dark, at its distal edge yellowish-white, the cell before and behind it black; undulate line lighter dentate with dark sagittae before it, the longest opposite the cell. Hindwing brown, in the disc a little lighter. The ♀ is darker, more blackish, the maculae and costal part scaled bluish-grey. According to a pair from the Volcano Irazu (Costa Rica).

edmondsi. **E. edmondsi** Btlr. (4 h). Yellowish-grey, dusted with brown, the veins remaining light; the anterior transverse line is only visible in the submedian space, the posterior line finely dentate; maculae dark, with grey rings and encircled with black, also the coniform macula; the undulate line consists of small, light diffuse spots proximally bordered with dark, one of which extends between the upper radials to the postmedian. Hindwing purely white with a black marginal line. The ♀ is much darker. From Chile.

lutescens. **E. lutescens** Bleh. (= *blanchardi* Berg) (4 h) is brownish-yellow with double transverse lines, little maculae in the black cell and an undulate line composed of small black sagittae. Hindwing semi-diaphanous white. The ♀ is much darker brown with an ochreous costal-marginal stripe. Chile.

araucaria. **E. araucaria** Hmps. (4 h) is more brownish than the preceding, in the basal area dusted black, otherwise very similarly marked, but besides with an undulate median line from the cell to the proximal margin. Marginal area brown with a light undulate line. Hindwing white, towards the margin brownish. Argentina and Chile. — f. **argentina** form. nov. (= ab. 1 Hmps.) has light brown wings without the black dusting in the basal and costal areas. Argentina.

coquimbensis. **E. coquimbensis** Hmps. (4 h) differs from the preceding by more red-brown wings which are dusted darker especially in the discal area below the cell, and by more distinct, double transverse lines. Hindwings diaphanous white. Chile.

americana. **E. americana** Bleh. (6 a) is red-brown, strewn darker, with very distinct, double, dentate transverse lines; the dark-pupilled maculae are ringed reddish and encircled with black; behind the light, dentate undulate line the margin is darker. Hindwings diaphanous white. Chile.

dianthoeciae. **E. dianthoeciae** Mab. Yellowish-brown, mixed with grey and strewn with dark; transverse lines single, the posterior line sharply dentate, median line present; maculae small, whitish, above the ring-macula a dark dot at the costal margin; before the undulate line dark dusting. Hindwing brown with white fringes. Patagonia.

falklandica. **E. falklandica** Hmps. (6 a). Forewing blackish-brown intermixed with yellow and grey scales and whitish transverse lines, the posterior line proximally bordered with black; the small, whitish maculae pupilled brown; undulate line light, before it black sagittae. Hindwing brown with whitish fringes. Falklands Islands.

E. edictalis Sm. (4 g) has grey forewings dusted with a reddish brown and strewn with black, with *edictalis*. double anterior and single posterior dentate transverse lines; the maculae are encircled and pupilled in black, the space between being blackened; undulate line indistinctly dentate. Hindwing dull brown with a darker discal spot and a similar transverse line behind it. Colorado.

E. obesula Sm. (6 a). Dark yellowish-grey, dusted darker, the transverse lines traceable by dots on *obesula*. the veins, the maculae blurred, dark; before the undulate line being likewise dotted a dark spot at the costal margin; the marginal area somewhat darkened. Hindwing white. From Montana and Texas.

E. siccata Sm. (6 b) is a smaller, brownish-grey species with single indistinct transverse lines, small, *siccata*. blurred, blackish maculae and a lighter undulate line; on the margin a series of black dots. Hindwing white, at the margin somewhat brownish. Colorado.

E. wilsoni Grt. (4 h) has narrower forewings than the preceding. Greyish-brown, of a more or less *wilsoni*. red-brown tint, the anterior transverse line indistinct, the posterior line being absent. Maculae grey, encircled with black or not, the ring-macula obliquely elliptical with a produced lower end; behind the light undulate line dusted darker. Hindwing greyish-brown, towards the margin darkened with white fringes. A most variable species. Specimens being intensely tinted chestnut-brown are called f. **specialis** Grt. — f. **aequalis** Harv. is a *specialis*. *aequalis*. form strewn with dark. — The green, white-striped larva lives on plants growing on the sea-coast. Colorado to California.

E. riversi Currie is very closely allied to *wilsoni* (4 h) and may not be a different species. It is light, *riversi*. intensely marked with narrow, long forewings, but with entirely white hindwings and a small coniform macula.

E. olivia Morr. (= *laeunosa* Grt., *segregata* Sm., *vanidica* Sm., *fieldi* Dyar) (4 h as „*lacrimosa*“) is a *otiria*. very variable species, the various synonyma of which were even placed in different genera. The ground-colour changes from a yellowish white, ochreous yellow, greyish-brown to reddish-brown, invariably with a lighter costal-marginal stripe; forewing with a black basal ray, mostly indistinct transverse lines, and the three maculae; the two upper ones sometimes in a darker, sometimes in an equally coloured ground, encircled with black, the ring-macula V-shaped, above open, the reniform macula in the centre somewhat strangulated; before the undulate line with black sagittae, behind it dusted darker. Hindwing white with brownish veins and margin. United States to California. The form **anacosta** Sm. is an ashy-grey form dusted with brown without a contrasting *anacosta*. costal part, with a dark marginal area and median shade, and white-ringed upper maculae. From Utah. — f. **enteridis** Sm. (= *zembla* Sm.) (6 a) has double transverse lines on a yellowish-grey ground, also a more or less *enteridis*. distinct median line; instead of it the basal ray and the marginal sagittae are absent. Described from Washington.

E. brevipennis Sm. (6 a) has greyish-brown forewings dusted blackish brown in the cell and marginal *brevipennis*. area, with a lighter costal-marginal streak and median; only the anterior transverse line is indistinctly double, the posterior one being entirely absent; the maculae are ringed lighter, encircled with black, the ring-macula very obliquely elliptical, above open; undulate line below the middle with 2 pointed teeth and darker shading below the costal margin. Hindwing white, veins and margin brownish. Colorado, California. — ab. **anguilirena** *anguilirena*. Sm. with a more slender, smaller body and broader wings has the reniform macula prolonged like a pointed tooth on the median proximally as far as the ring-macula. Colorado. — In f. **brevistriga** Sm. both the transverse *brevistriga*. lines are absent, and the marginal area is distinctly defined by a dark smoky brown; at the base of the subcosta there is a short, black stripe. Colorado.

E. cicatricosa Grt. & R. (= *teplia* Sm.) (4 h). Forewing greyish-brown with a white subcostal streak, *cicatricosa*. yellowish maculae and a long, yellowish diffuse spot below the lower median vein as far as the undulate line; also the area between this and the postmedian is yellowish-white like the upper median and lower radial veins. The anterior transverse line is absent, the posterior line being traceable by black sagittae. Hindwing white, veins and margin brownish. — **recula** Harv. (4 i) has a darker ground-colour, black mixed with brown, whereas *recula*. **neomexicana** Sm. (4 i) exhibits a reddish sand-coloured yellow colouring with more whitish maculae. Widely *neomexicana*. distributed in the United States to California and New Mexico.

E. cinereopallida Sm. (6 a) is of a still purer white and less yellow than *recula* with an oblique, oblong- *cinereopal-* elliptical or rectangular ring-macula which is round in *recula*. *lida*. From Oregon to California.

E. ducalis Sm. Forewing dusted dull yellowish greyish-brown on a white ground with a white costal *ducatis*. margin, median and its branches except the lower median branch, in the basal and subterminal areas likewise more or less white; the anterior transverse lines are double, the posterior one being single, dentate, the undulate line only traceable by the dark marginal area; in the black cell there is the oblong, oblique, yellowish ring-macula being ringed white and encircled with black, and the similarly coloured reniform macula. Hindwing white with a smoky distal margin. Expanse of wings: 35 mm. Utah.

E. dargo Streck. (= *rumatana* Sm.) is allied to *niveilinea* (6 b); forewing yellowish smoky-grey with *dargo*. white-striped subcostal branches and median; from the coniform macula a yellow stripe extends to the posterior transverse line; the transverse lines are double, filled up with yellowish, the posterior line of a purer white;

marginal area uniformly darkened, proximally bordered by the yellow undulate line; the maculae are white-ringed in a darkened ground. Hindwing whitish with a broad, smoky grey marginal band. Expanse of wings: 26 to 32 mm. Dakotah, Canada (Alberta).

niveilinea. **E. niveilinea** Grt. (6 b) is likewise not dissimilar to *recula* (4 i), of a yellowish brown with a white subcostal streak, median and its branches, maculae and submedian stripe, the ring-macula being obliquely elliptical; the grey posterior transverse line is finely dentate like the brownish undulate line. Hindwing as in *rabata*. *recula*. From Nebraska and Kansas to Texas, Colorado, and New Mexico. — **rabata** Sm. is a smaller form of a darker colouring, and the white line on the shoulder-covers is not so distinctly prominent; forewing dusted with a deep smoky brown on a dark yellowish ground. Canada, South Dakotah, Colorado.

quadriden-
tata. **E. quadridentata** Gr. & R. (= *pugionis* Sm.) (6 b) differs from the preceding by much more contrasting forewings being marked with a bright yellowish white on a dark reddish or greyish-brown ground, and by the reddish ochreous-yellow collar; the undulate line consists of small black sagittae. Canada to Colorado and California. — **flutea** Sm. has spotted transverse lines interrupted on the veins; the black, subterminal sagittae are all equally long and arranged in a straight line; compared with the long abdomen, the wings seem to be shorter and narrower. From the Sierra Nevada.

flavidens. **E. flavidens** Sm. (6 b) likewise resembles the preceding species, but it is darker, the light markings are finer, the ring-macula small, round, pupilled brownish like the reniform macula, the cell before it and behind it filled up with black. Hindwing somewhat darker, in the ♀ quite dark brown. Colorado to New Mexico and Arizona.

laetificans. **E. laetificans** Sm. (= *masculus* Sm. (4 i) differs from *flavidens* by a still darker, dull brown colour, and a more ochreous, narrower costal-marginal streak; the maculae are smaller, more ochreous-brown; the whole marginal area is not lighter, but darker, only the undulate line is ochreous. Hindwing of a pure white. From Colorado.

plagigera. **E. plagigera** Morr. (= *olivalis* Grt.) (4 i as *olivalis*, 4 k) is dusted blackish-brown, olive-brown or grey with a whitish costal-marginal streak. The ring-macula is very narrow and oblique, like the reniform macula ringed whitish and encircled with black; the light submedian ray is narrow, more grey like the undulate line, before which there are black sagittae. Hindwing whitish, dusted with brown. United States to Colorado, California.

oblongistig-
ma. **E. oblongistigma** Sm. (= *agema* Streck.) (4 k) is recognizable by lighter brown wings with a black basal ray, quite extinct transverse lines, the cell being before and between the maculae filled up with black, otherwise very much like all the preceding species, likewise with their light submedian ray. Hindwing of a darker brownish grey. Montana to California and Colorado.

ridingsiana. **E. ridingsiana** Grt. (= *maimes* Sm.) (4 k) is very much like *oblongistigma*, but it has no long, oblique, but a small round ring-macula, and the ground between the maculae encircled with a somewhat flesh-coloured tint is not black. Submedian streak and undulate line likewise flesh-coloured. Hindwing brown, the veins and margin still darker, with white fringes. Colorado, New Mexico, Arizona.

holleman. **E. holleman** Grt. (4 k) is greyish-brown, below and behind the cell reddish, with a black basal ray and a light grey costal-marginal streak; the two upper maculae more or less confluent in the cell which is filled up with black; no transverse lines at all, the veins in the marginal area somewhat darker. Hindwing white with brownish veins and margin, in the ♀ quite brown. Colorado, Nevada, California, Arizona.

andera. **E. andera** Sm. is marked almost the same as *holleman* (4 k), but very much lighter, of a light bluish-grey with a light costal margin and a brownish shade in the disc; maculae confluent, the lower half of the cell black; marginal area darkened with small blackish spots between the veins. Expanse of wings: 28 to 35 mm. Utah, Colorado, Washington, Arizona.

atristrigata. **E. atristrigata** Sm. (4 k) is ashy-grey, thickly strewn with black, with extinct transverse lines; the oblong, narrow ring-macula flows together with the reniform macula, the cell between being black; a light patch extends from the cell-end to the apex; the radial and median branches are more or less bordered with whitish; black antemarginal sagittae, particularly in the form **collocata** Sm. (4 h) which shows a much darker red-brown ground-colour. British Colombia, Colorado.

nevada. **E. nevada** Sm. (= *floramina* Sm.) (6 b) differs from the similar form *collocata* (4 k) of the preceding species by its more brownish-grey ground-colour, and is abundantly strewn with black; a black basal ray is present; the maculae are small, filled up with brownish and subcostally connected by a small white stripe, the cell before it and between being black; from the reniform macula a blackish wedge extends to the margin. Hindwing white, towards the margin brownish. Nevada, California.

xasta. **E. xasta** B. & McD. (6 b) is similar to *holleman* (4 k), but much lighter, the two upper maculae are not confluent, but distinctly separated, the cell between them not black, but only somewhat darker than the ground; the reniform macula is likewise distinct, the basal ray less developed. The ground-colour is more ochreous-yellowish, at the costal and proximal margins grey; the veins in the darkened marginal area are blackish,

partly on both sides bordered with grey. Hindwing white in the basal half, distally brownish-grey with a darker discal spot. Described from Texas (Kerrville).

E. citricolor *Grt.* (= *tronellus* *Sm.*) (6 c) is very conspicuous owing to the light lemon-coloured *citricolor*. tint; almost without markings, only with a short, reddish-brown streak at the lower cell-end and some brown marginal dots; fringes reddish. Hindwing of a pure white. Colorado. — f. **postmedialis** *Strd.* (= ab. 1 *Hmps.*) *postmedialis*. has traces of a posterior undulate transverse line, and before the somewhat darkened marginal area an irregular undulate line, the maculae are indistinctly darker traceable. From Utah and Arizona.

E. catenula *Grt.* (= *contagionis* *Sm.*) (6 e, d) is white, faintly tinted yellowish and strewn with a dark *catenula*. brown. The transverse lines are only traceable by black dots on the veins, the ring-macula by a black dot, the reniform macula by a small dark luna. Hindwing white, veins and margin brownish. Montana, Colorado, California, and New Mexico.

E. pallipennis *Sm.* (= *alcesta* *Sm.*) (6 d). Brownish-grey, strewn with a darker brown; the blackish *pallipennis*. transverse lines are dentate, the maculae surrounded with black in a blackish dark cell, the reniform macula in the centre marked somewhat darker, the marginal area is darkened behind the dentate undulate line. Hindwing semi-transparent white with brownish veins, margin and discal spot. British Columbia to Colorado.

E. satiens *Sm.* (6 c) is darker than the preceding, brown, strewn with black, the anterior transverse *satiens*. line indistinctly double, both the maculae darkened in the centre, the ring-macula oblong, at both its ends extended; the postmedian is pointedly dentate on the veins; in the darkened marginal area a lighter undulate line. Hindwing of a pure white. British Columbia, Colorado.

E. misturata *Sm.* (6 c). Forewing reddish-brown, strewn with black with an undulate, double anterior *misturata*. transverse line, the maculae are whitish, encircled and pupilled with black; from the reniform macula an undulate median line runs to the proximal margin; postmedian dentate; in the darkened marginal area a light undulate line, before which there are small black sagittae. Hindwing white with a light brown marginal band. Colorado. — f. **perturbata** *Sm.* (= *candida* *Sm.*) (6 d) is much darker, in the basal area and behind the postmedian lighter *perturbata*. than in the discal and marginal areas, both the transverse lines double. — f. **gian** *Streck.* is the race from Ari- *gian*. zona, often somewhat lighter with a less distinct marking, the area between the maculae but slightly darker, on the whole scarcely worth mentioning.

E. vertesta *Sm.* Forewing quite light yellowish, dusted with grey and brown, the ♀ is still lighter; *vertesta*. transverse lines faded and little prominent, double, and there is also a rather distinct median shade, approximating the anterior transverse line at the proximal margin; the light undulate line forms a W and is anteriorly bordered with small dark sagittae; marginal area darker; maculae rather small yellowish, the reniform macula pupilled with grey. Hindwing white. Expanse of wings: 30 mm. Utah in September.

E. mitis *Sm.* (6 d) is much lighter, reddish yellow, scantily strewn with black, with indistinct transverse *mitis*. lines, the anterior one being double, the posterior line single, dentate, the large maculae quite extinct, between them a dark median shade; the light, irregular undulate line is proximally shaded darker. Hindwing white. Colorado. — **ura** *Sm.* (= *uramina* *Sm.*) has more distinct double transverse lines and more distinct maculae, *ura*. but it is just as variable as the type. Described from Utah. — **colla** *Streck.* is merely a subordinate form of *colla*. *ura* with a faded marking.

E. moerens *Grt.* (= *luteola* *Sm.*) (6 e). Red-brown, strewn with blackish; the maculae are encircled *moerens*. with blackish, in the centre pupilled darker, a median shade extends from them to the proximal margin; the posterior transverse line is dentate; behind the undulate line the marginal area is darkened. Hindwing yellowish-white, veins and marginal area brownish. Colorado, New Mexico, Arizona.

E. orbicularis *Sm.* (6 e) is yellowish-grey, both the transverse lines are distinctly double, the upper *orbicularis*. maculae are light, encircled with blackish, the reniform macula pupilled darker; median shade indistinct; the posterior transverse line is uncommonly close at the margin. Hindwing light yellowish-grey. Nevada.

E. sotnia *Sm.* is likewise very light yellowish-grey, strewn with black; the transverse lines are partly *sotnia*. interrupted, blurred by the dusting; an extinct median shade darkens the cell between the maculae; the ring-macula is mostly small and indistinct, the reniform macula large, incompletely defined. Hindwing white with a narrowly darkened margin. Expanse of wings: 29 to 34 mm. Utah.

E. cona *Streck.* (= *falerina* *Smith*) (6 e) is lighter or darker yellowish, strewn and marked with a *cona*. brownish grey, with double, dentate transverse lines, a faded median shade and an irregular undulate line in a somewhat darker marginal area, the two upper maculae surrounded and pupilled with blackish in a darker ground. Hindwing white with yellowish veins. Nevada, Colorado.

E. mercedes *B. & McD.* (6 c) is a smaller species, ochreous yellowish, watered with a deep flesh- *mercedes*. colour or claret-colour, transverse lines dentate, the anterior line being double; ring-macula round, above open, reniform macula lighter than the ground, pupilled darker, below it a blackish median shade; marginal area somewhat darker with a light flesh-coloured undulate line therein. Hindwing yellowish white with a darker

marginal band. This apparently rather variable species originates from California.

- feniseca*. **E. feniseca** *Harv.* (6 c) is similarly marked, but larger, and of a more ochreous-brown ground-colour, with large maculae surrounded by blackish. Hindwing white with brown veins and marginal line, in the ♀ quite brown. Colorado, California.
- conjuncta*. **E. conjuncta** *Sm.* (6 c) resembles *feniseca*, but both the transverse lines are distinctly double, the distal ones being black, the proximal ones more brownish. Colorado, New Mexico.
- clavigera*. **E. clavigera** *Dyar* (6 d) is very much like *feniseca*, but it is somewhat smaller, of a purer grey, with a somewhat greasy lustre, very coarsely strewn with black, marked like *feniseca*, but the maculae somewhat lighter, still more prominent owing to the black ground of the cell, the coniform macula is larger and more distinct. Hindwing white with ashy-grey veins and marginal band. From Mexico (San Angel), taken in December.
- detersa*. **E. detersa** *Wkr.* (= *pitychrous* *Grt.*) (6 d) is smaller than the preceding, otherwise very similar; whitish grey, dusted with reddish brown particularly in, below and behind the cell and in the marginal area; the median, the upper median and lower radial branch are white like the anterior undulate transverse lines and the maculae which are encircled with brown; between the dentate posterior transverse line and the similar undulate line there is a whitish band. Hindwing white with a brown margin and veins, in the ♀ browner. Canada and North-Eastern States to Colorado. — **personata** *Morr.* is a darker and more intensely marked form. — f. **azif** *Streck.* is probably only a synonym of *detersa*. — The brownish larva with a thin skin, white dorsal, subdorsal, lateral and substigmatal lines lives on grasses.
- intrita*. **E. intrita** *Morr.* (6 e). Forewing monotonously reddish dark brown, extensively dusted black, markings mostly indistinct; transverse lines and median shade blackish; the undulate line consists of small blackish sagittae which are distally reddish; the maculae are ringed reddish and surrounded with black. Hindwing brownish-white with yellowish veins and marginal area. Canada to California and Arizona. — **strigilis** *Grt.* (= *titubatis* *Sm.*) (6 e) has the forewing scantily strewn with white, and the transverse lines and maculae are likewise bordered with whitish like the undulate line. Canada. — **reuda** *Streck.* (6 f) is somewhat lighter reddish-brown with greyish-hued transverse lines and maculae, in the marginal area suffused with black. Washington. — **alticola** *Sm.* (6 e) is still lighter reddish-brown, with quite extinct markings, sometimes without any markings at all. From Oregon, Colorado and California.
- phaeochroa*. **E. phaeochroa** *Hmps.* Dark red-brown, dusted with grey, with black, dentate transverse lines, the anterior line being very much distally angled above the proximal margin; the ring-macula is a small brown spot, the reniform macula faintly surrounded by brown, between them a brown median line to the lower cell-angle, from there dentately to the proximal margin; undulate line a little lighter, proximally with small red-brown sagittae, the marginal area behind them darkened. Hindwing white, hued with reddish-brown, with a faint discal spot and postmedian line. Expanse of wings: 30 mm. Peru (Acopampa).
- cartagensis*. **E. cartagensis** *Schs.* Thorax brown, tinted violet; forewing reddish-brown, with blackish-brown, dentate transverse lines, the anterior ones being double, the posterior line single, pointedly dentate; in the darker brown cell are the large maculae encircled with a lighter colour and pupilled darker; undulate line fine, before it a dark brown shade at the costal margin, below it small dark sagittae, behind it dark grey shades. Hindwing whitish, distally greyish-brown. Expanse of wings: 38 mm. Costa Rica.
- rufula*. **E. rufula** *Sm.* is yellowish brown, strewn with a darker brown, both the transverse lines double, and with a darker median shade; the maculae are lighter ringed and encircled with black in a blackish ground, the ring-macula is obliquely elliptical, above open; behind the lighter undulate line the marginal area is darkened, before it some small dark sagittae. Hindwing brown with a darker discal spot and yellowish fringes. — f. **basiflava** *Sm.* (6 f) has a contrastingly lighter yellowish basal area. Canada to Colorado.
- infracta*. **E. infracta** *Morr.* (= *rubefactalis* *Grt.*) (6 f as *rubefactalis*) resembles *basiflava* in the lighter yellowish basal area, but also the marginal area is lighter, the transverse lines are only single, sharply dentate; no small sagittae before the undulate line. Hindwing ochreous-yellowish brown with darker veins and margin. Washington, Texas, Colorado.
- infausta*. **E. infausta** *Wkr.* (= *numa* *Streck.*) (6 f). Light brown, strewn with reddish and darker; anterior transverse line double, the posterior line single, maculae surrounded with black, ring-macula elliptical, reniform macula pupilled dark; median shade distinct as well as the sinuate undulate line. Hindwing brown with white fringes. Canada, United States to New Mexico.
- micronyx*. **E. micronyx** *Grt.* (6 f) is somewhat larger, dusted with grey on its dark brown ground, otherwise marked very much like *infausta*, but the ring-macula is round and, like the reniform macula, pupilled dark, the latter often with an indentation on the inside; the undulate line is proximally reddish and below the centre dentate. Hindwing brown with darker veins. California.

E. satis *Harv.* (6 f) is purple-brown, suffused with grey, in the basal area with a reddish spot below *satis*, the cell, the anterior transverse line is double, the posterior line single, and there is mostly also a median line. The maculae are distally and proximally bordered with black, the cell between them reddish; the light undulate line is proximally reddish, distally grey. Hindwing brown. Montana to California.

E. sponsa *Sm.* (6 f) is very much like *satis*, distinguished by a single anterior transverse line which *sponsa* is proximally tinted grey, very small indistinct coniform macula, darker pupilled upper maculae, the undulate line being proximally bordered with black and distally with a darker brownish grey. Washington.

E. holoberba *Sm.* (6 g) also resembles *satis*, but both the transverse lines are double, filled up with *holoberba*, a lighter colour; the cell between the maculae darkened with blackish; median shade rather indistinct; undulate line in some places interrupted, proximally accompanied by a dentate shade. Hindwing dark brown. Canada (Alberta).

E. bicollaris *Grt.* (= *loya Sm.*, *monteclara Sm.*) (6 g) is of a very variable colouring changing from *bicollaris*, a light brownish-grey to a dark drab, the transverse lines very indistinct, the posterior line more or less double, mostly only traceable by dots on the veins, the undulate line likewise indistinctly double, behind it dusted dark; maculae large, very indistinctly defined. Hindwing brown, with darker veins and margin. California, Arizona.

E. perfusca *Grt.* (6 g) is an entirely dark brown species with hardly noticeable markings, large maculae *perfusca* surrounded with dark, the undulate line being marked by whitish dots. The whitish hindwing is dusted with brownish, particularly on the veins, and at the margin with white fringes. Washington to California and Arizona. — f. **compressipennis** *Sm.* (6 i) is lighter, of a more reddish tint, with more distinct markings, double, dentate *compressipennis* transverse lines filled up with a lighter colour, and the cell darkened between the maculae; described from California. — f. **cocklei** *Sm.* is more chocolate-brown or smoky brown, the markings are distinct, the transverse *cocklei* lines filled up with yellowish. From British Columbia.

E. excogita *Sm.* (6 g). Forewing grey, dusted with reddish-brown and strewn with black, the markings *excogita* very indistinct, the maculae being absent except the reniform macula which is only a dark crescent. Hindwing brownish-grey with white fringes. Colorado.

E. selenis *Sm.* (= *claromonta Sm.*) is light ashy grey, strewn with brownish, the reniform macula *selenis* and marginal area darker; the transverse lines are double, faded except the more distinct beginnings at the costal margin; ring-macula obliquely oval, above open, the distal one being reniform, ringed with a light colour and pupilled black. Hindwing white with a brownish distal margin. Expanse of wings: 31 to 35 mm. California.

E. immixta *Grt.* (6 k) somewhat resembles some specimens of *cona (falerina)* with a light reddish- *immixta* yellow ground-colour strewn with a darker shade; costal margin and base of proximal margin are dusted with grey, the transverse lines are finely dentate black, double, starting from black costal-marginal spots; the maculae are small and very indistinct. Hindwing whitish, veins and margin brown. Texas.

E. punctigera *Wkr.* (= *pastoralis Grt.*) (6 h) is blackish-brown, dusted somewhat grey, the maculae *punctigera* are encircled with black, the ring-macula very small, the transverse lines very indistinct, the undulate line traceable by indistinct blackish streaks. Hindwing brown, with darker veins. From British Columbia to New Mexico and Arizona.

E. perpolita *Morr.* (6 h). Forewing deep blackish-brown with rather inconspicuous markings: a double *perpolita* anterior and single posterior transverse line, the maculae being surrounded by black and with grey small diffuse spots instead of the undulate line. Hindwing whitish, at the margin broadly darkened. North-Eastern and Central States: Maine, Massachusetts, New York, Colorado.

E. exculta *Sm.* (6 g) is dark red-brown, dusted with grey, with entirely faded markings, the anterior *exculta* transverse line traceable by some golden brown scales, like the maculae; the undulate line is only traceable by the darker marginal area behind it; hindwing ochreous-brown, at the margin darker with yellowish-white fringes. British Columbia. — f. **criddlei** *Sm.* is mahagoni-brown, with a blackish marginal area which is defined *criddlei* by some light scales indicating the undulate line, and with somewhat lighter hindwings. Described from Manitoba.

E. stigmatalis *Sm.* (6 g) is much larger, brown, strewn with a blackish brown; the maculae are surrounded *stigmatalis* with black and strewn with some grey scales; the anterior transverse line is absent, the posterior line quite indistinct, the undulate line grey. Hindwing white with brown veins and margin. Colorado, Arizona. — f. **atrofusca** *atrofusca* *Sm.* is more greyish-brown, drab or reddish-brown, towards the margin dusted with black, with a distinct double anterior transverse line.

E. stygialis *B. & McD.* (6 g). Deep purple black, almost no transverse lines, near the base of the cell *stygialis* some ochreous scales, from there a black patch to the small, oval ring-macula being pupilled ochreous and broadly surrounded with black like the reniform macula which is above open; the coniform macula is a broad, black sagitta; undulate line traceable by blackish patches. Hindwing smoky brown. Arizona.

- velleripennis*. **E. velleripennis** Grt. (6 h) is a very dark, blackish-brown species with indistinct transverse lines which are often only traceable by dots on the veins; both the upper maculae large, surrounded with black, the reniform macula often with a grey spot distally; undulate line indicated by a row of black and grey dots on the veins. Hindwing white, on the veins and margin brownish, in the ♀ entirely darkened. Canada, United States.
- acornis*. **E. acornis** Sm. (♀ = megastigma Sm.) (6 h). Yellowish brownish-grey, strewn with black with indistinct markings; maculae light, large, encircled with brownish, between them more or less darkened, particularly in the ♀; the posterior transverse line is indistinctly double or reduced to dots. Hindwing white with a faded dark marginal band. British Columbia. — f. **testula** Sm. (6 i) is more grey with entirely faded, nebulous markings; there is also a median shade darkening the space between the maculae.
- taura*. **E. taura** Sm. is greyish-brown with distinct markings; transverse lines double, the posterior one only partly double; the irregular undulate line marked by small black triangular spots; a blurred median shade darkens the cell between the maculae which are encircled with black; reniform macula somewhat lighter than the ground. Hindwing yellowish with a broad, dark marginal band. Expanse of wings: 36 mm. Assiniboia.
- alko*. **E. alko** Streck. (= sessile Sm., termessa Sm., naevula Sm.) (6 i) is allied to the preceding; ground-colour variable, reddish or yellowish brownish-grey, the markings more or less blurred, the transverse lines double, the maculae rather large, encircled with black, the ring-macula elliptical or almost round, the cell between them darkened, the reniform macula crossing the cell below; the undulate line is very indistinct, at the costal margin marked by a dark triangular spot before it. Hindwing yellowish white, towards the margin darker. Colorado, California.
- choris*. **E. choris** Harv. (= cogitans Sm., achor Streck.) (6 i) is lighter yellowish-brown, dusted with grey, with a faint black basal ray, the transverse lines indistinctly double, the posterior line only traceable by double dots on the veins. Ring-macula oblong elliptical, finely encircled with black, the reniform macula only proximally bordered with black. Hindwing white, at the margin brownish. Nevada, Colorado.
- nostra*. **E. nostra** Sm. (6 k). Reddish-brown, strewn with black, with a grey costal-marginal streak; maculae surrounded with black, pupilled dark, the cell before them and between them black, the posterior transverse line double; the undulate line proximally bordered by black sagittae, behind it the marginal area is darkened. Hindwing greyish-brown. California.
- pluralis*. **E. pluralis** Grt. (6 k). Forewing at the costal, distal and proximal margins grey, in the disc ochreous with reddish-brown stripes in the spaces between the veins; transverse lines absent except the whitish undulate line being dentate below the centre; the median and its branches are striped grey and black, those from the lower cell-angle being white; both the upper maculae are encircled with whitish, grey, the ring-macula oblong, pointed, the reniform macula strangulated, below produced towards the base. Hindwing white, towards the margin brownish. Nevada, Colorado.
- biformata*. **E. biformata** Sm. resembles *mimallonis* (6 i) by the same ferruginous, somewhat smoky ground-colouring; the markings therein are almost entirely extinct, only at the costal margin better visible, in the ♀ more distinct; transverse lines double, the posterior distal line only marked by dots on the veins; median shade indistinctly present; maculae hardly visible by yellowish scanty strewing; undulate line only marked by the darker marginal area. Hindwing brownish-grey. California.
- serricornis*. **E. serricornis** Sm. Reddish ochreous, strewn with a darker colour. Transverse lines double, the posterior line only marked by dots on the veins; ring-macula faded, with a light ring like the darker reniform macula; undulate line light, proximally shaded dark, the marginal area behind it greyish-brown. Hindwing whitish, towards the margin brownish. South California. — f. **itodes** Sm. (= epictata Sm.) (6 k) has a median shade darkening the space between the maculae in the cell, the posterior transverse line is present and dentate. Arizona. — f. **tocoyae** Sm. (6 k) is dusted brick-reddish on the yellowish ground, the transverse lines are filled up with yellowish, the maculae encircled with the same colour. California.
- tetrica*. **E. tetrica** Sm. Yellowish-reddish, dusted with grey, similarly marked as the preceding, but the maculae larger, surrounded with blackish, the median shade being absent; the lighter undulate line is very indistinct. Hindwing brownish-grey, towards the base lighter. Expanse of wings: 35 to 37 mm. Texas, Nevada.
- medialis*. **E. medialis** Sm. (= kerrvillei Sm.) (7 a) is light yellowish-grey, dusted with brownish, the transverse lines indistinctly double, the posterior line dentate; maculae large, lighter than the ground, strewn with dark in the centre, with a distinct median line between them; undulate line traceable by small dark spots. Hindwing white with a darker margin and discal spot, in the ♀ brownish-grey. From Texas. — f. **truva** Sm. is more reddish-grey, strewn with black, with interrupted transverse lines, the marginal area more intensely strewn with blackish; the median shade is much more distinct. Colorado. — f. **poncha** Sm. is very light yellowish-white without any reddish or flesh-coloured tints, and in the ♀ the hindwings are also white like in the ♂; the median shade is narrower and extends from the lower cell-angle close at the postmedian and parallel to it; likewise from Colorado.

E. placida B. & McD. (9 e) is a smaller species very well distinguished by salmon-coloured forewings, *placida*, and a flesh-coloured thorax intermixed with white. Forewing in the costal part lighter, in the basal and proximal parts blackish and strewn with white; transverse lines marked by somewhat lighter bands which are bordered with a hardly darker colour; ring-macula small, yellowish, in the centre strewn darker, a dark median shade near the reniform macula which is only marked by a small dark spot; marginal area darker, strewn with blackish, traversed by the lighter undulate line. Hindwing white, at the distal margin darkened. Texas, based upon 1 ♀.

E. mimallonis Grt. (= *rufipennis* Grt.) (6 i) is a large, deep chestnut-red species with single, finely *mimallonis*, dentate transverse lines, small dark maculae surrounded with grey, and a dentate median line between them; behind the lighter undulate line the marginal area is darkened. Hindwing white, at the margin darkened, in the ♀ quite brown. Distributed from Canada to California. — f. **gagates** Grt. (6 i) is red-brown with darkened veins, *gagates*, the maculae are encircled with white, the anterior transverse line is absent, the posterior line is indistinct. — f. **caenis** Grt. (= *muscosa* Grt., *lenola* Sm.) (7 a) has a more grey ground-colour, suffused and strewn with carmine, *caenis*, particularly around and between the maculae, and only with traces of transverse lines. From Colorado.

E. messoria Harr. (= *spissa* Gn., *inextricata* Wkr., *indirecta* Wkr., *displeiciens* Wkr., *expulsa* Wkr., *messoria*, *ordinata* Wkr., *reticens* Wkr., *cochrani* Riley, *repentis* Grt. & R., *confracta* Morr., *friabilis* Grt.) (6 k) is a very common, greyish-brown species dusted with a darker brown, with double dentate transverse lines, large maculae surrounded with black, and a sinuate undulate line with small dark spots before it and a darkened margin behind it. Hindwing white, tinted brown. Very widely distributed from Canada to California. — f. **territoralis** Sm. *territoralis*, (= *fulda* Sm.) (7 a) is somewhat greyer with a more distinct dentate median shade and a triangular darkening at the costal margin before the undulate line. — Larva light brown, laterally darker with fine lighter longitudinal lines; it lives polyphagous on low plants.

E. septentrionalis Wkr. (= *incubita* Sm., *relexa* Sm.) (7 a) is larger, darker brown, intensely strewn *septentrionalis*, with black, the cell being blackened round the maculae; the space between the postmedian line and undulate line is of a purer grey, before the latter small blackish spots. Hindwing whitish with brownish margin and veins. Canada to California.

E. scholastica McD. Forewing brown, dusted with light ochreous, with the same markings as in *scholastica*, *messoria* (6 k), but better pronounced, the transverse lines double like there, filled up with somewhat lighter ochreous; the ring-macula is a uniform oval, pupilled with ochreous-yellow; hindwing much darker, smoke-brown, with a distinct, small median spot. Expanse of wings: 35 mm. The genitals are different from those of *messoria*. According to the author the species may belong near *pestula*. From Ottawa; apparently rare.

E. dodi McD. shows narrow, uniformly grey forewings with a very distinct marking; the usual trans- *dodi*, verse lines are black, double, filled up with a lighter colour, the anterior line is straighter than usually, vertical to the proximal margin; the long coniform macula is surrounded with black, the ring-macula roundish-oval, somewhat lighter than the ground, the reniform macula is broad, both surrounded with black; the light undulate line is still more prominent owing to the darkened marginal area, in the middle there are before it often small black sagittae. The whitish hindwing is smoky. Expanse of wings: 30 to 32 mm. Canada (Alberta).

E. difformis Sm. (7 a). Grey or brownish-grey, strewn darker; both the transverse lines double, the *difformis*, anterior line partly interrupted, the proximal ones always stronger and black, the averted ones fine, brownish; median shade present; maculae rather small, grey, encircled with black, the reniform macula pupilled darker; the undulate line is proximally bordered by a shade which is crossed by grey on the veins. Hindwing yellowish white, towards the margin brownish. Oregon.

E. fuscigera Grt. (7 a) is light greyish-brown, strewn darker, in the disc and on the folds suffused with *fuscigera*, ferruginous brownish; the transverse lines are single, black, the posterior line dentate; between the indistinct maculae there is a square black spot; undulate line irregularly dentate. Hindwing whitish, distally brownish. Colorado, California.

E. terrena Sm. (= *lagganac* Sm.) (7 a). Dark ashy or brownish grey, strewn with a darker tint, *terrena*, transverse lines double, but the posterior line only at the costal margin, median shade on the median distally angled; maculae somewhat lighter, the ground between them darkened; undulate line interrupted, grey, proximally bordered with a darker shade. Hindwing greyish-brown with whitish fringes. British Columbia, Washington.

E. brunneigera Grt. (7 b) is reddish-brown, strewn darker. Transverse lines single, no median shade *brunneigera*, maculae finely encircled with black. Undulate line indistinctly dentate, distally grey. Hindwing dark brown. From Canada to California, a common species. Larva somewhat transparent dirty brown with a lighter dorsal line on both sides shaded darker; it lives on low plants.

E. atropulverea Sm. (7 a) is larger than the preceding, dark greyish-brown with double transverse *atropulverea*, lines; maculae like in *brunneigera*; a median shade is interrupted on the median; undulate line composed of indistinct, small, blackish lunae. Hindwing light brownish. From Colorado. — f. **ternaria** Sm. (= *masoni* *ternaria*,

Cockerell, *coloradensis* *Strand*) (7 b) is darker red-brown, whereby it resembles more *brunneigera*; but it is easily discernible by the double transverse lines and the distinct median shade.

- bifasciata*. **E. bifasciata** *Sm.* (7 b) is very much like *brunneigera*, but easily recognizable by the very much approximated single transverse stripes, the posterior one of which is fused with the median shade at the costal and proximal margins; maculae little visible. From Arizona.
- fumalis*. **E. fumalis** *Grt.* (= *permunda* *Morr.*) (7 b) is dark greyish-brown; anterior transverse line double, composed of 4 bows, the posterior line single, dentate; no median shade; maculae only marked by darker punctiform spots. Hindwing almost just as dark brown. Canada. United States to the south as far as New York. —
- vestitura*. f. **vestitura** *Sm.* is tinted more reddish or yellowish and has a distinct median shade. Described from New Brunswick.
- ontario*. **E. ontario** *Sm.* (7 b) has dark blackish-brown forewings with a still darker discal area, the transverse lines are distinctly double, also the median shade is marked; the ring-macula is a small light spot, the reniform macula is dark, light-ringed; undulate line marked by light scales. Hindwing likewise quite dark. Canada.
- comosa*. **E. comosa** *Morr.* is light brick-coloured; transverse lines blackish, the anterior line double, the posterior line single; between the indistinct maculae an almost straight median shade, the undulate line proximally shaded with dark, behind it the marginal area is darkened. Hindwing reddish grey. Expanse of wings: 37 mm. Colorado.
- quinquelinea*. **E. quinquelinea** *Sm.* (7 b) is not unlike *bifasciata*, but more brownish-grey, the transverse lines much farther separated, the median shade isolated, not fused with the posterior one. California. — f. **lutulenta** *incallida*. *Sm.* (7 c) is lighter yellowish-brown, the transverse lines are indistinctly double; from Nevada. — f. **incallida** *Sm.* (7 b), however, is a lighter brownish-grey form. — From Canada to California.
- lucida*. **E. lucida** *B. & McD.* (9 h), similar to *lutulenta* (7 c), is a very small, light ochreous species with grey strewing which increases towards the margin; median area of a brighter ochreous colour; transverse lines double, particularly the anterior line filled up with a somewhat lighter shade; between the bright yellow maculae a faded darker median shade, the undulate line lighter, proximally shaded with brown, forming a W below the centre. Hindwing smoky brown, towards the base lighter. Utah.
- vallus*. **E. vallus** *Sm.* (7 d) is yellowish-grey, intensely dusted with a dark grey; transverse lines single, the posterior line pointedly dentate, the median shade broadly faded, between the large, light ring-macula and the dark-pupilled reniform macula; undulate line marked by dark indistinct spots. Hindwing light brownish-grey. British Columbia.
- bostoniensis*. **E. bostoniensis** *Grt.* (7 c) is larger than the preceding, with lighter whitish hindwings, with a more distinct, narrower, strongly dentate median line and without any maculae; undulate line marked by darker dusting before it. Canada, North-Eastern and Central States.
- vulpina*. **E. vulpina** *Sm.* (7 c) is smaller, ashy-grey, without the yellow tint of the preceding, the transverse lines much more indistinct; median shade distinct, but faded; undulate line marked by small light spots. Hindwing light grey. British Columbia.
- quebecensis*. **E. quebecensis** *Sm.* (7 d) is still smaller, of a dirty brownish grey, strewn darker, with indistinct markings. Transverse lines single, the posterior line pointedly dentate; median shade faint; maculae lighter than the ground, the reniform macula pupilled dark; undulate line marked by white dusting. Hindwing brownish-grey. Canada (Quebec). — f. **dolens** *Sm.* is more bluish ashy-grey, towards the distal margin dusted more reddish-brown, particularly the undulate line proximally shaded with red-brown; transverse lines still more indistinct, the posterior line is almost entirely absent; maculae scaled somewhat orange. British Columbia. — f. **quinta** *Sm.* is more ashy grey, dusted with brown, the posterior transverse line double, but the distal half is only traceable by dots on the veins; median shade broad, dark; from British Columbia. — f. **moxa** *Sm.* is dull yellowish-grey, but with a light undulate line distally shaded darker and a blackish spot as the reniform macula being the only marking, and with ferruginous, yellow-striped fringes; described from Colorado and Durango.
- dakota*. **E. dakota** *Sm.* Loam-coloured yellow, strewn darker, with black markings; the transverse lines are double only at the costal margin, otherwise single, bordered with a somewhat lighter tint, with a broad, straight, faded median shade; maculae indistinctly marked blackish; the undulate line is a dark shade. Hindwing of a dirty grey, towards the margin brownish. Expanse of wings: 32 to 34 mm. Dakota.
- lineifrons*. **E. lineifrons** *Sm.* (= *audentis* *Sm.*) (7 c) is marked by a black band on the frons. Colour of forewing whitish greyish-yellow, transverse lines blackish, dentate, distinct, partly double by dots on the veins, with a distinct median shade being broken at the median; of the maculae only the reniform macula is visible as a small blackish luna. Undulate line proximally shaded dark like the margin. Hindwing dirty white, towards the margin blackened. Colorado.

E. annir *Streck.* is very similar to *lineifrons* (7 c), the transverse lines and the median shade are less *annir*. prominent; this species is probably only a form of the preceding. Described from Colorado.

E. discilinea *Dyar* (7 c) is allied to *lineifrons* (7 c) and the two following species, it is of a purer *discilinea*. ash-grey, only sometimes with a brownish band between the median shade and the postmedian line. Hindwing in the ♂ of a pure white with a darker anteterninal band, in the ♀ quite dark greyish-brown with white fringes. It is perhaps a southern form of *pedalis* (7 d) to which it seems to be the most closely allied. From Mexico (City) in November.

E. annulipes *Sm.* (7 c) is extraordinarily similar to *lineifrons* (7 c), smaller, somewhat greyer, without *annulipes*. the black-banded frons, the forewing towards the margin, particularly towards the costal margin more intensely blackened, the median shade still more distinct and darker brown, the dark marginal shading of the undulate line leaves the apex itself light; hindwing somewhat lighter. Oregon.

E. pedalis *Sm.* (7 d) is likewise similar, more reddish-yellow, the maculae are more distinctly marked, *pedalis*. behind the very intense black median shade the fine double transverse lines recede entirely; marginal area blackened, especially towards the apex. Hindwing of a pure white. Colorado.

E. teleboa *Sm.* (7 d). On the entirely light yellow forewing almost only the broad faded black median *teleboa*. shade and the blackish-strewn reniform macula are prominent, all the other markings having vanished nearly altogether; marginal area somewhat darkened. Hindwings white. From New Mexico.

E. recticincta *Sm.* (7 c) is very similar to *teleboa*, with somewhat intenser markings, particularly the *recticincta*. median shade being deeper, proximally sharply, distally hazily defined; the ring-macula is present as a light ring. Hindwing white with traces of a discal spot and marginal shading. Canada (Alberta).

E. cincta *B. & Benj.* is allied to *annulipes* and *recticincta*, but darker than both, with more strongly *cincta*. serrate antennae. It is perhaps still more closely allied to *lucida* (9 h), likewise darker with a thicker antennal shaft. From all the allied species distinguished by narrower valves with a finely spined uncus. Expanse of wings: 31 to 35 mm. Arizona.

E. murdocki *Sm.* (7 e) is easily recognizable by the ferruginous brownish colour with a bluish-grey *murdocki*. discal area; the transverse lines are distinctly double, between the two upper maculae the cell is filled up with red-brown; behind the undulate line the marginal area is darkened. Hindwing brownish-grey. British Columbia, Utah, California.

E. tessellata *Harris* (= *insignata Wkr.*, *illata Wkr.*, *maisi Fitch.*, *insulsa Wkr.*, *subsignata Wkr.*, *per-* *tessellata*. *lentans Wkr.*, *nigricans Riley*) (7 d). Forewing lighter or darker brown, dusted with grey; transverse lines distinct, the anterior line double, the posterior line single, with traces of a median line; the grey-dusted maculae are situate in the cell being filled up with black; undulate line light, below the middle dentate, behind it the marginal area is darkened. Hindwing brownish-white. Widely distributed from Canada to Colorado. — f. **atropurpurea** *atropurpurea*. *Grt.* (= *finis Sm.*) (7 e) are the darker forms with a more distinctly prominent undulate line. — f. **nordica** *Sm.* *nordica*. is a dark form with a contrastingly lighter, grey-dusted costal part, from British Columbia. — f. **flaviscapula** *flaviscapula*. *Sm.* is a very monotonously dark greyish-brown form with some ochreous yellow scales at the distal edge of the reniform macula and in the undulate line; the collar is yellowish, too. From New Mexico. — f. **tesselloides** *tesselloides*. *Grt.* (= *neotelis Sm.*, *objurgata Sm.*, *cariosa Sm.*, *focina Sm.*, *laminis Sm.*) (7 e) are more grey specimens, sometimes ash-grey with bluish-grey dusting between the postmedian and undulate lines, and generally more distinctly pronounced transverse lines and a black basal ray; if the area between the posterior transverse line and the undulate line is especially contrastingly light, this is f. **acutifrons** *Sm.*, in which there is reddish-brown dusting *acutifrons*. below and behind the cell.

E. remota *Sm.* (7 d) is an entirely pale reddish-grey species, in the discal area more reddish, darkened *remota*. in the marginal area; the transverse lines are double, partly reduced to dots on the veins; the maculae are large, grey, finely surrounded with black. Hindwings dirty white, at the margin darker. California.

E. intrusa *Sm.* (7 e) has broader wings than *tessellata* (7 d), it is of a reddish-brown, strewn with black *intrusa*. and dusted with a whitish grey in the costal-marginal part, basal area, in the centre of the proximal margin, and in the distal-marginal area; transverse lines double, strongly developed; the maculae are very light on the contrastingly dark ground of the cell; a median shade together with the postmedian line often forms a dark band. Undulate line light, proximally bordered with dark. Hindwing yellowish-brown. From California.

E. esta *Sm.* recalls *velleripennis* (6 h), it has the same marking, but it is more smoothly scaled and *esta*. not so dark black; the likewise similar *punctigera* (6 h) is browner, and its maculae are more broadly surrounded with yellowish. Forewing smoky-blackish, dusted with yellowish, with more or less faded markings; only the yellowish-strewn undulate line is somewhat more prominent owing to black scales. Hindwing yellowish-white, towards the margin smoky, in the ♀ quite brownish-grey. Expanse of wings: 32 to 36 mm. British Columbia.

E. atomaris *Sm.* (7 e). Forewing ochreous-brown, suffused with a darker colour, with very indistinct *atomaris*. transverse lines, and the maculae are only marked by the fine black bordering; the undulate line is marked by whitish scales. Hindwing semitransparent white, towards the margin brownish. From Colorado and Cali-

- detesta*. fornia. — f. **detesta** *Smith* (7 f) is a much lighter form, yellowish greyish-white, dusted with brown, with a mostly more distinct marking. Washington, Colorado.
- abnormis*. **E. abnormis** *Sm.* (7 e) is very similar to *intrusa* (7 e), lighter, more reddish grey with less contrastingly light maculae, the anterior transverse line double, the posterior line single; the reniform macula is pupilled leaden-grey, *intrusa* with a little yellowish, the median shade being absent. Hindwing more dirty greyish-brown with a dark discal spot. California.
- noctuiiformis*. **E. noctuiiformis** *Sm.* (7 f) is drab, on the collar with a black median line; the forewing with double transverse lines and large maculae in light rings and surrounded with black, the cell before and between them darkened; there is a median shade being broken on the median; marginal area darkened, before it the light, proximally dark undulate line. Hindwing yellowish brown. Washington, California.
- pleuritica*. **E. pleuritica** *Grt.* has red-brown forewings with a yellowish reflection, at the costal margin and in the proximal part more greyish-brown, dusted with whitish. Transverse lines double, filled up with a lighter colour, the posterior line only marked by dots on the veins, and with grey maculae surrounded with black; undulate line whitish. Hindwing brownish, towards the margin darker. Canada to California.
- pestula*. **E. pestula** *Sm.* Ground-colour brownish yellow, bluish-grey, strewn with brown and black except the yellowish basal area; transverse lines all double, frequently filled up with a lighter colour, also a median shade is distinct; maculae large, light grey in a darkened ground; undulate line light, before it a darker costal-marginal spot, behind it the marginal area is darkened except the apex which remains light. Hindwing yellowish, distally smoky. Expanse of wings: 31 to 37 mm. Alberta (Canada)
- declarata*. **E. declarata** *Wkr.* (= *decolor Morr.*) (7 g) was united with *tessellata* by HAMPSON, but BARNES and Mc DUNNOUGH have stated (*Canad. Entomol. L* [1918] p. 194) that this is probably not correct. At any rate this species and the following offer a great deal of difficulties that have not yet been solved. It is certainly a fact that 2 extremely similar species, though with different genitals, have been mixed up with each other. The present species has purple brown wings with a reddish tint, remarkably large maculae and light hindwings. In the ♂ genital organ the appendices of the harps are equably long and form almost a U. Canada (Vancouver) and United States.
- campestris*. **E. campestris** *Grt.* (7 g, h) is the second, nomenclaturally somewhat doubtful species, with very dark purple brown wings without any other tints, with small maculae and darker hindwings. The proximal continuation of the harp is shorter, the distal one at the base not so uniformly rounded and much longer. Canada to Colorado. — The larva is brown, somewhat transparent with lighter dorsal, subdorsal and lateral lines, and lives polyphagous on low plants.
- verticalis*. **E. verticalis** *Grt.* (7 f) is similarly marked as the preceding species, but lighter and more variegated, lilac-grey with a mostly reddish costal part; the anterior transverse lines are double, filled up with whitish, the posterior line only at the costal margin double, otherwise single, sharply dentate; the large maculae in lighter rings are situate in the blackened cell, from the lower angle of which a median shade extends to the proximal margin; before the light undulate line there is a dark triangular spot at the costal margin, behind it the margin is darkened. Hindwings of a pure white. Colorado, California. — f. **spectanda** *Sm.* with a more distinct and clearer marking, smaller maculae, and still lighter, lustrous white hindwings is an insignificant form from Colorado.
- albipennis*. **E. albipennis** *Grt.* (♀ = *nigripennis Grt.*) (7 g) has yellowish-brown forewings dusted with grey and a contrastingly dark brownish-black thorax; the markings are entirely like in *verticalis*, the costal area is darkened. Hindwing white with a fine brown marginal line. The ♀ is much darker, purple black, the hindwing also dark brownish-grey with white fringes. From Canada to California. — f. **malis** *Sm.* (= *indensa Sm.*) (7 g) is a more bluish-grey form, the discal area scantily dusted with reddish, and with a faded posterior transverse line. From Canada. — In f. **bialba** *Sm.* from Dakota and Utah the ♀ is not darker, but coloured like the ♂, and the hindwing is also only very slightly brownish.
- colata*. **E. colata** *Grt.* (7 g) is a large, likewise quite dark species, purple brown, scantily strewn with grey, with quite indistinct transverse lines, and a black ground before and between the equally coloured maculae which are finely surrounded with black. Hindwing monotonously dark brown. Oregon, California.
- lewisi*. **E. lewisi** *Grt.* (7 h) is smaller than the preceding similar species, more red-brown with likewise indistinct transverse lines, the posterior line dentate, the maculae in grey rings and surrounded with black in a deep black ground; the undulate line is more distinct, light, finely dentate. Hindwing lighter brown with whitish fringes. Colorado.
- trifasciata*. **E. trifasciata** *Sm.* in the marking resembles *bifasciata* (7 b), but the forewing is darker red-brown, strewn with a bluish grey, and with distinct, large maculae encircled with black, partly grey, the reniform macula laterally strewn with yellow; between both the dark median shade passes through and approaches the rather indistinct, more faded posterior transverse line below the cell; undulate line light, punctiform. Hindwing brownish-grey. Expanse of wings: 37 mm. Oregon, from Mt. Hood.

E. extranea Sm. from Montana is likewise somewhat similar, but of a dark ashy-grey colour, in the *extranea*. marginal area darker, with the distinct transverse lines and dark median shade extending between the small, black-encircled maculae to the proximal margin; the anterior transverse line is indistinctly double, the others single. Hindwing yellowish brownish-grey. Expanse of wings: 37 mm.

E. mollis Wkr. (= fernaldi Morr.) (7 h) is not unlike *tessellata* (7 d). Forewing greyish-white, dusted *mollis*. with red-brown, the least in the basal area, the most in the discal area; the transverse lines are strong, single, black, dentate, on the averted sides bordered with grey; the grey, darker pupilled maculae in a deep black ground; the ring-macula triangular, above open. Collar grey, in front with a deep brown band. Hindwing lighter or darker brownish. From Canada and Colorado.

E. drewseni Stgr. Forewing basally dirty ash-grey, the rest reddish-brown, transverse lines and median *drewseni*. line distinct, black, the maculae indistinctly grey; undulate line marked by dark dots. Hindwing grey with a dark marginal band. Expanse of wings: 30 mm. From Greenland.

E. luteosita Sm. (7 h) is greyish-yellow, in the discal area reddish-brown and dusted with blackish, *luteosita*. with distinct transverse lines similarly arranged as in *bifasciata*, and with large, somewhat lighter maculae; the faded median shade is more distinct in the ♀; undulate line marked by black, small sagittae on the inside. Hindwing brownish-grey, towards the base lighter, with a dark discal spot and yellowish fringes. From Colorado.

E. dissona Möschl. (= rara Pack.) (7 i) is very variable, light grey with a lilac tint, dusted brownish *dissona*. with indistinct transverse lines and maculae, between the latter with a more distinct, quadrangular, brown spot; the undulate line is marked by darker, diffuse sagittae. Hindwing light brown. From Labrador. — f. **opipara** *opipara*. Morr. (= labradoriensis Stgr.) (7 h) has been dealt with in the palearctic part Vol. III, p. 32, t. 6 i. Light grey, very characteristic by a black basal ray as far as the anterior transverse line, continued into the coniform macula which is filled up with black and from the apex of which a black stripe extends to the posterior transverse line. From Greenland, Labrador, and Mt. Washington. — The dark brown larva exhibits a whitish, interrupted dorsal line and subdorsal lines.

E. munis Grt. (= sublatilis Grt.) (7 i) is very much like *dissona*, but larger and more intensely marked, the *munis*. lines black dentate, also the distinct median line; coniform macula present and surrounded with black. Colorado. Nevada.

E. rena Sm. (7 i) is likewise allied to the two preceding species, it is more of a violettish grey, on the *rena*. thorax mixed with red-brown, the transverse lines quite indistinct, the posterior line marked by a double row of dots, the maculae in lighter rings and surrounded with black, between them the cell is black. Hindwing somewhat lighter brownish. California. — f. **cervinea** Sm. has a light ash-grey colour with a claret-coloured *cervinea*. tint, the posterior transverse line is single, finely dentate, not in the shape of a row of dots; the ground between the maculae is reddish or brown, not black; median line present. From Canada (Montana, Vancouver, Calgary).

E. divergens Wkr. (= versipellis Grt.) (7 i) is more purple brown with a costal streak strewn with *divergens*. light grey, a black basal ray and white-striped median and base of the subcostal; the black transverse lines are bordered with grey on the averted sides; the maculae in grey rings and surrounded with black, between them the cell is black, also behind them as far as the posterior transverse line; undulate line light grey. Hindwing brownish, towards the base lighter. Canada to Colorado and California. — The larva is dirty grey, somewhat diaphanous, on the dorsal and ventral sides somewhat lighter; it lives polyphagous on many low plants. — ab. **fusimacula** Sm. has confluent maculae and between them no black-filled cell. — f. **abar** Streck. (= factoris *fusimacula*. Sm.) is towards the base and margin lighter reddish-grey, only in the discal area darker red-brown with distinctly *abar*. double transverse lines. — f. **caesia** Sm. is a more purely bluish-grey form, brownish is only the filling of the *caesia*. maculae and the basal area below the cell, the cell around the maculae being black. California.

E. henrietta Sm. (7 i) somewhat resembles the more variegated forms of the palearctic *obelisca* (Vol. III, *henrietta*. t. 5 h); brownish-grey with a lighter costal-marginal part; the cell and the space behind it as far as the post-median line dusted with brown; a black, broad basal ray is present; transverse lines dentate, on the averted sides bordered with grey; the maculae are in whitish rings and surrounded with black, the ring-macula oblique oval, above open; the marginal cell-spaces are striped blackish. Hindwing white, dusted with brownish. Distributed from California through Mexico to Costa Rica. — The larva is diaphanous dirty white, on the dorsum somewhat reddish, it lives on the roots of low plants. — f. **adusta** B. & McD. is darker, without the light costal *adusta*. stripe, especially also the marginal area is darker.

E. delicata B. & McD. is a very small species with purple red forewings with distinct, dentate, *delicata*. single black transverse stripes; the maculae are surrounded with black and pupilled with ochreous-yellow scales; the faintly yellowish undulate line defines the darker marginal area. Hindwing dirty whitish with brownish veins. Expanse of wings: 28 mm. Described according to a ♀ from California.

E. obeliscoides Gn. (= sextilis Grt.) (8 a) is very much like *henrietta* (7 i), but it has more chestnut- *obeliscoides*. brown forewings with a reddish-white costal-marginal stripe and a darkened inner-marginal half as far as the

posterior transverse line, a more blackened cell between the reddish-white maculae and the black, dentate, *infusa*, double transverse stripes. United States to New Mexico. — f. **infusa** *Sm.* is of a deeper blackish brown with a slight violet reflection and quite indistinct transverse stripes. From Canada and Wyoming.

redimicula. **E. redimicula** *Morr.* (8 a) is similar to the preceding, but browner, dusted with grey, with a bluish-grey costal stripe and inner-marginal area; transverse lines grey, the posterior line inside with black diffuse sagittae, the area behind it bluish-grey with a similar costal patch; maculae grey in a blackish-brown ground. *servita*. Hindwing dark brown. Canada to Colorado. — ab. **servita** *Sm.* (7 i) has the discal area below the cell and behind the reniform macula suffused with a deep blackish brown.

westermanni. **E. westermanni** *Stgr.* (13 g) is similar to *Rh. musiva* (Vol. III, p. 39, t. 8 f) and has often been mistaken. According to DR. CORTI who was able to examine the type of f. *polaris*, it is a distinct *Euxoa*. Forewing reddish-brown with a prominently yellowish costal-marginal stripe and light maculae in a dark ground. The sole type known from Greenland is in the Zoological Museum at Copenhagen. From Labrador f. *polaris* *B.-Haas* was described, being somewhat duller dark brown with a less contrasting costal-marginal stripe. HAMPSON in his Cat. Lep. Phal. IV, Table LXIX f. 20 has erroneously figured the *Epipsilia möschleri* as *westermanni* and described it as *Euxoa* on p. 301; the same has been done in the palearctic Volume III, p. 50, and besides *Epipsilia wockei* and *scropulana* has been mixed up with it.

costata. **E. costata** *Grt.* (8 a) is bright chestnut with a reddish-white costal stripe and similar maculae surrounded with black, the ring-macula V-shaped, above open, its proximal bordering as a black undulate stripe bordering below on the light costal area and prolonged to the base; the transverse stripes are feeble, the posterior one dentate, the undulate line only marked by the dark marginal bordering leaving free the apex and the anal angle. Hindwing reddish-brown with white fringes. Canada to California. — f. **idahoensis** *Grt.* (= *furtiva* *Sm.*) (8 a) is more grey-dusted with somewhat smaller maculae and a broader black ground between both. Hindwing somewhat lighter. — f. **clausa** *McD.* is light olive grey on the forewing with the same marking as *idahoensis* (8 a), but more distinctly pronounced, the ground between the maculae is smoky brown, not black. Probably a subordinate form of *idahoensis*; from Alberta (Canada).

foeminalis. **E. foeminalis** *Sm.* (8 a). Blackish-brown, dusted grey, with a white costal-marginal streak dusted with brownish and extending basally to the median, the transverse lines indistinctly pronounced, the maculae whitish in the black cell, the ring-macula oblique oval, above open; undulate line marked by a line of whitish dots. Hindwing light brown. Colorado.

basalis. **E. basalis** *Grt.* (8 b). Forewing chestnut-red, in the basal area dusted with a light grey without a light costal-marginal part; transverse lines indistinctly double, the posterior line single, dentate; maculae grey and reddish, in whitish rings and surrounded with black in a deeper red-brown ground of the cell. Hindwing whitish, veins and margin brownish. The ♀ is more monotonously brown. Colorado.

solitaria. **E. solitaria** *Sm.* Yellowish ferruginous, strewn with black, particularly in the discal area; transverse lines indistinct, light grey; maculae yellowish in a darkened ground. Hindwing blackish. Expanse of wings: 33 mm. From Labrador.

hispidula. **E. hispidula** *Gn.* (8 b). Greyish-brown, strewn with black, with double dentate transverse lines, grey-ringed maculae in a black-dusted ground of the cell; undulate line indistinctly dentate, behind it dark dusting. *fuscalis*. Hindwing whitish, veins and margin brownish. — The ♀ is much darker than in f. **fuscalis** *Strd.* — Falklands Islands, Patagonia, and Chile.

bilitura. **E. bilitura** *Gn.* (= *cineraria* *Blch.*, *deprivata* *Wkr.*) (8 c) is larger, lighter brown, strewn with whitish. Transverse lines double, finely dentate; maculae small, surrounded with black, between and before them one black streak each; undulate line hardly visible. Hindwing semidiaphanous white. From Chile.

sesta. **E. sesta** *sp. n.* (13 f) is yellowish-grey, coarsely and densely strewn with blackish, the cell filled up with blackish, the two yellowish-grey maculae in it surrounded by a still deeper black; transverse lines only at the costal margin marked by 2 black double streaks each, otherwise little visible, only the posterior line somewhat more distinct, composed of fine black arcuate lines, proximally convex, on the veins pointedly extended distally; undulate line merely marked, proximally bordered by somewhat darker small spots. Hindwing whitish, on the veins and at the margin very feebly brownish. From Peru (Cuzco).

conifrons. **E. conifrons** *sp. n.* (13 e) has purple brown forewings strewn with a lustrous lavender-grey colour, with a jet-black cell in which are the grey-strewn maculae, the ring-macula above open; the subbasal and anterior transverse lines are very distinct, double, the latter subcostally and in the cell projecting distally very pointed, the submedian space between the bow of the antemedian and subbasal transverse lines prominent as a roundish, iron-grey spot; the coniform macula is a blackish patch above the fold; posterior transverse line double, dentate, behind it whitish and black dots on the veins; undulate line only marked by the somewhat darker subterminal space behind it; before the somewhat lighter limbal line black marginal dots. Hindwing

white, at the costal margin brownish. Very conspicuous is the very large, cylindrical, black frontal projection. Palpi jet-black, anterior tibiae light yellow. 1 ♂ from the Quindiu Pass (Colombia), taken by FASSL.

E. lineifera *Blch.* (8 c) with a peculiarly narrow, pointed shape of the wings is dark brown with a *lineifera*. whitish costal stripe and white-striped veins, a black basal ray and black sagittae instead of the undulate line; transverse lines and maculae are absent altogether. Hindwing dark brown. Chile.

E. steniptera *Dogn.* has likewise narrow wings of brown, strewn with white subcostally, on the median, *steniptera*. the inner-marginal vein and at the proximal margin in the central area, with black markings: basally a costal-marginal streak and a submedian dot, a black spot at the base of the cell, from which 2 branches proceed enclosing a white area as a ring-macula and uniting before the reniform macula; coniform macula present in a similar shape; the reniform macula is large and indistinct, proximally brownish, distally bordered by black, from where black stripes extend between the veins. Hindwings grey with white fringes. Expanse of wings: 23 mm. Peru (Cuzco).

E. clavisigna *Dogn.* is brownish, dusted with a lilac grey; anterior transverse line brown, only visible *clavisigna*. below the cell, with the coniform macula from which an oblique stripe extends to the proximal margin, cutting the beginning of the brown posterior transverse line; the two upper maculae are quite indistinct, yellowish; undulate line an indistinct shade. Hindwing grey. Expanse of wings: 26 to 27 mm. Ecuador.

E. nomima *Dogn.* Forewing brown; anterior transverse line marked by 2 or 3 black dots, the posterior *nomima*. line finely dentate; the upper maculae are brown, the ring-macula oblong oblique, above open, the reniform macula traversing the lower cell-angle, surrounded with black, in the jet-black cell; undulate line marked by black sagittae. Hindwing dirty white, veins and margin grey. Expanse of wings: 33 to 37 mm. Costa Rica (Volcano of Irazu).

E. ochrogaster *Gn.* (= *turris* *Grt.*) (8 b) is a large, deep red-brown or more yellowish-brown species *ochrogaster*. with indistinct transverse lines; maculae rather inconspicuously grey-ringed and surrounded with black, the ground of the cell before and between them more intensely dusted with black; a median line extends from the lower cell-angle to the proximal margin; behind the postmedian the veins are dark-striped; the undulate line is light, proximally often with small black sagittae. Hindwing brown, towards the base lighter. Apex of abdomen, and ventral side ochreous. Canada, United States to Missouri, Colorado. — f. **insignata** *Wkr.* (= *cinereomacula* *insignata*. *Morr.*, *gularis* *Grt.*) is more greyish-brown, marked somewhat more variegatedly.

E. excellens *Grt.* (= *perexcellens* *Grt.*, *infelix* *Sm.*) (8 b) is as large as the preceding, of a lighter red- *excellens*. brown, with a whitish costal-marginal streak and a black basal ray; anterior transverse line double, filled up with whitish, the posterior line single, towards the margin light reddish parts; the whitish maculae with brownish pupils and surrounded with black are in the black ground of the cell; undulate line distinct, white, before it black sagittae. Hindwing brownish, on the margin and veins darker. Canada to California. — The larva is dirty brownish, above lighter, with light subdorsal lines and a whitish stigmatal; it is polyphagous.

E. atrifera *Grt.* (= *pindor* *Sm.*) (8 c) is light greyish-brown, on the thorax more reddish with a long *atrifera*. black basal ray and quite indistinct transverse lines; the hardly lighter maculae are situate in the blackened cell; the coniform macula is also surrounded with black. Hindwing white, on the veins and margin brownish. United States: Maine, Colorado, California.

E. silens *Grt.* (8 c) is very similar, greyer, finely strewn with brown; the transverse lines are entirely *silens*. extinct, the surroundings of the grey, black-encircled maculae are red-brown, the veins in the marginal areas being striped brown; undulate line indistinctly grey with small brown sagittae before it. Hindwing as in *atrifera*. Nevada.

E. pimensis *B. & McD.* (8 d). Forewing light reddish-grey with double transverse lines and large, *pimensis*. equally coloured maculae finely surrounded with black, in the cell not being darkened; no coniform macula; behind the indistinct, lighter undulate line the marginal area is darkened. Hindwing of a pure white, diaphanous. From Arizona, described according to 1 ♂.

E. tristicula *Morr.* (= *nesilens* *Sm.*) (8 c) is quite light greyish-yellow, the collar with a black band. *tristicula*. On the almost unmarked forewing only the black basal ray and a triangular and quadrangular black spot are visible in the cell before and between the place of the maculae, as well as some small blackish spots of the undulate line. Hindwing whitish, marginal area brownish. Maine.

E. brocha *Morr.* (= *bochus* *Morr.*) (8 d) has reddish-grey forewings strewn with black, in the costal *brocha*. halves striated brown; transverse lines marked by short black streaks on the veins; instead of the ring-macula a dark dot, the reniform macula is a small, dark luna from which a red-brown median line extends to the proximal margin. Hindwing whitish, at the margin brownish with a median spot and a series of dots on the veins behind it. From Nebraska, Kansas, Colorado, and Nevada. — The larva is greenish-brown with a black head and black tubercles; it lives on clover and Cruciferae.

sculptilis. **E. sculptilis** Harv. (= *xyliniformis* Sm.) (8 d) is easily recognizable by the grey basal half and the deep blackish-brown distal half of the forewing with double transverse lines. Ring-macula grey, reniform macula blackish-brown, both surrounded with black. Hindwing brownish, on the margin and veins darker. Texas, New Mexico.

vetusta. **E. vetusta** Wkr. (= *tetra* Wkr., *euroides* Grt., *perpura* Morr.) (8 d). Forewing bluish-white, strewn with blackish-brown, with double transverse lines and equally coloured, black-encircled maculae with a black, quadrangular spot between them. Hindwing brown. From Canada to California.

10. Genus: **Chorizagrotis** Sm.

This genus includes the species ranged among the *Euxoa* by HAMPSON and exhibiting finely serrate antennae provided with eiliary tufts; all the other marks agree with the said genus except the flatter abdomen, so that this comprehension represents little more than a subordinate genus, as is also the case with the following genus.

auxiliaris. **Ch. auxiliaris** Grt. (8 d, e) is brown with an ochreous-yellowish costal-marginal streak and proximal margin, the median being striped white; transverse lines black, dentate, the anterior line being proximally bordered with ochreous-yellowish; from the coniform macula being encircled with black, a yellowish stripe extends to the undulate line; maculae whitish, with brown pupils and rings; the space between the postmedian and undulate line is yellowish, before the latter there are black sagittae. Hindwing brown with whitish fringes. In the ♀ the costal margin remains grey. Widely distributed from Kansas to Colorado and New Mexico. — *introferens.* The form **introferens** Grt. is more variegated, whereas f. **tegularis** Strd. (= ab. 1 *Hmps.*) (8 e) is darker and greyer *tegularis.* with a similarly coloured costal margin and inner-marginal part.

sorrow. **Ch. sorrow** Sm. is very similar to *auxiliaris* (8 d, e) and perhaps only a form of it, the yellow and ochreous tints being here replaced by a bluish grey; the type in the National Museum is besides smaller and it is without the black subterminal sagittae. According to BENJAMIN, *auxiliaris* (8 d, e), *sorrow*, *inconcinna* (8 e) and also *agrestis* presumably all belong to one variable species bred from the same larvae and connected by all kinds of transitions, so that more than 100 names might be given!

agrestis. **Ch. agrestis** Grt. (= *mereenaria* Grt.). Light reddish-brown, dusted grey, with very indistinct transverse lines, the anterior lines double and with lighter maculae which are surrounded with black; reniform macula in the lower part pupilled brownish-grey; undulate line grey, often in the centre with small black sagittae before it. Hindwing brown, in the disc whitish. United States (Nebraska to California) and Mexico.

inconcinna. **Ch. inconcinna** Harv. (= *differens* Druce) (8 e) is darker greyish-brown, indistinctly marked, the maculae partly pupilled somewhat yellowish, otherwise similar, but smaller. From Texas to Mexico.

balinitis. **Ch. balinitis** Grt. (8 f) is likewise similar, more intensely strewn with black, with a greyer costal-marginal stripe and basal half of the proximal margin; the anterior transverse line is stronger, only single, the maculae surrounded with whitish. Hindwing lighter, brownish white. British Columbia to Colorado.

sorella. **Ch. sorella** Schs. (8 e) has purple-brown forewings, below the basal half of the costal margin tinted reddish with a black basal ray and black transverse lines, the anterior line double, the posterior line single, dentate; coniform macula very long, encircled with black; the upper maculae encircled with black, with a black stripe before and between them; the undulate line consists of small black and grey sagittae. Hindwing diaphanous white with brown margin and veins; the collar is in the ♂ reddish at the base, in the ♀ light yellowish. Known from Mexico.

perolivalis. **Ch. perolivalis** Sm. is olive-grey with a whitish costal stripe and subterminal whitish strewing; transverse lines double, filled up with whitish, before the whitish undulate line black sagittae; the maculae are dusted with whitish and encircled with black. Hindwing yellowish-brown with white fringes. Expanse of wings: 34 to 35 mm. Canada (Alberta).

terrealis. **Ch. terrealis** Grt. (8 f). Blackish-brown with a brick-coloured reddish costal-marginal stripe and a black basal ray, a double anterior and quite extinct posterior transverse line; the grey maculae in a black cellular ground, the ring-macula oblique elliptical; undulate line marked by small light scales, behind it darkened. Hindwing brownish-grey, towards the base lighter. New Mexico.

thanatologia. **Ch. thanatologia** Dyar is drab, in the basal and marginal areas lighter, in the discal area blackish with a black basal ray; transverse lines double, filled up with a lighter colour, beginning with a more distinct light costal-marginal spot; maculae lighter, in dark rings, coniform macula darker; undulate line light with black sagittae before it and a dark subapical shade; the extreme marginal area is blackish. Hindwing brownish with white fringes. Expanse of wings: 40 mm. — f. **sordida** Sm. is more dirty brown, in the black dusting variable, the discal area sometimes not darker, the whole wing turning purple-blackish; the maculae in a somewhat darker ground, but not deep black. British Columbia. — f. **boretha** Sm. resembles *E. excellens* (8 b) by its much more variegated exterior: more red-brown with a contrastingly lighter, yellowish costal stripe and maculae in

a black ground. British Columbia. — f. **perfida** *Dod.* is uniformly dark mahagoni-brown varying with blackish-*perfida*. brown, with very slightly ochreous-brownish transverse lines and shading, without any black markings, the maculae coloured like the ground, except the somewhat more distinctly prominent reniform macula.

Ch. benefida *sp. n.* (13 e) entirely resembles a very pale *Feltia malefida* (9 a, b), but owing to the *benefida*. conical, stunted frontal projection it cannot belong there; the ♂ has serrate-dentate antennae, owing to the abdomen not being flattened it neither belongs entirely to this genus and is only provisionally inserted here. Very light reddish yellowish-grey with exactly the same marking as *malefida*, but the reniform macula is somewhat smaller and narrower, of a plain blackish grey with a lighter angular line in the centre; the ring-macula is connected with it by a very fine black streak above the median. The costal margin is only subcostally strewn with a somewhat darker shade. Hindwing white, somewhat diaphanous. From Ecuador (Riobamba).

11. Genus: **Rhizagrotis** *Sm.*

This group of species with *acclivis* (8 f) as its type comprises the species with plain, eiliary antennae; as we have already stated in the preceding genus, it is more a subordinate genus; the abdomen is cylindrical, not flattened.

Rh. socorro *B. & McD.* This pretty species is extremely variable in the ground-colour, from a light *socorro*. yellowish brown, reddish-brown to dark blackish-brown, so intensely strewn with blackish that a marbled exterior is created, with a black basal ray, a yellowish costal margin and equally coloured maculae, black double transverse lines and bluish-white undulate line beginning with a larger costal spot. Hindwing diaphanous white, darkened on the veins and margin, in the ♀ darker. Described from Arizona. — f. **pampolycala** *Dyar* *pampolycala*. (8 e) belongs hereto, it is marked exactly the same, but more iron-grey in the ground-colour, without the dark filling of the cell and not so variable. The hindwing of the ♀ is like that of the ♂ whitish and hardly darkened. Mexico.

Rh. salina *B. & McD.* (= *arabella* *Dyar*) (8 f, 13 f as *arabella*) is quite similar. Blackish-brown, tinted *salina*. somewhat reddish, with a light yellowish costal margin, the undulate line being entirely absent, only a darker triangular spot subapically at the costal margin before it indicating its position. Hindwing white. Described according to 1 ♂ from Arizona, occurring also in Mexico (Morelos).

Rh. manethusa *Drc.* (= *albicosta* *Sm.*) (8 g) has purple blackish hindwings with a whitish costal-*manethusa*. marginal stripe, with finely black-striped veins therein, with a black basal ray, distinct double transverse lines filled up with a somewhat lighter colour and between them with reddish maculae in white rings and encircled with black, in the deep black cell, the reniform macula produced at the upper end and on the outside connected with the postmedian line by black streaks; coniform macula distinct, black; undulate line indistinct, dentate; fringes ochreous-reddish. Hindwing semi-diaphanous white with a brownish margin. Common from Colorado to Mexico. — Whether **ebenea** *nov.* is a distinct species, is doubtful. Larger, with broader wings, still much *ebenea*. darker, purple black, the costal streak of a somewhat more reddish tint, similarly marked, but without a coniform macula and with almost extinct transverse stripes. Hindwing pearl-coloured white, at the margin darkened. Mexico.

Rh. triclava *sp. n.* (8 f) has the colour of *albicosta*, but it is without the light costal-marginal streak; *triclava*. the maculae are coloured like the ground and are only conspicuous owing to the deeper black bordering, the ring-macula is distally extended into a point, the coniform macula is uncommonly large and broad and below it the anterior transverse line forms another kind of coniform macula, pointedly projecting below the inner-marginal vein as far as the coniform macula; the posterior transverse line is hardly visible, double, finely dentate; the undulate line is marked by some lighter small dots being only visible behind the cell, which are distally and proximally bordered by black sagittae; from the centre of the reniform macula distally a fine black streak extends to the posterior transverse line. Hindwing white, at the margin very feebly brownish. Colombia (Pacho).

Rh. apicalis *Grt.* (8 f) is light reddish-brown, with blackish veins and black double transverse lines, small *apicalis*. maculae feebly encircled with a darker brown, and a purple blackish apex down to the middle radial vein, in the marginal area black internerval streaks. Hindwing brown, with darker veins and light fringes. Colorado, New Mexico, Arizona.

Rh. acclivis *Morr.* (= *reclivis* *Dyar*) (8 f). Dark brown with an ochreous-yellowish costal stripe and *acclivis*. reddish internerval stripes; anterior transverse line double, the posterior line single; maculae small, reddish-yellow, from the reniform macula black streaks extend to the postmedian; in the marginal area reddish internerval stripes and ochreous-yellowish diffuse sagittae, with speckled fringes. Hindwing yellowish-white, with brownish margin and veins. Texas, Colorado, Arizona.

Rh. opaca *Harv.* is extraordinarily similar to *acclivis* (8 f), but more sharply marked with darker *opaca*. striped veins and less dark shaded. From the Eastern States (New York).

Rh. proclivis *Sm.* (= *oaxaeana* *Schs.*, *obelisca* *Drc.* pr. p.) (8 g) is larger than *acclivis*, very similar to *proclivis*. it, in the discal area and at the apex more intensely blackish, with an anteriorly pointed ring-macula being

more or less confluent with the reniform macula; the undulate line consists of small whitish sagittae, 2 of which opposite the transverse vein are bordered by black longitudinal streaks. Hindwing brown with whitish fringes. Arizona and Mexico.

cataclivis. **Rh. cataclivis** Dyar (8 h) is likewise similar, smaller than the preceding, distinguished by its light cell which is only blackened behind the reniform macula, and by the ring-macula being also prolonged towards the base. Hindwing lighter. Mexico, Orizaba.

neoclivis. **Rh. neoclivis** B. & Benj. also resembles *proclivis* (8 g), but it is easily discernible by the lighter ochreous ground-colour, so that it may be merely a northern race. Expanse of wings: 37 to 41 mm. Texas (Kerrville).

gracilior. **Rh. gracilior** sp. n. (13 g) probably belongs into the same propinquity and forms the transition between the groups of *manethusa* and *cataclivis*. Head and thorax slate-coloured black; forewing on the ground showing through brown densely dusted purple black; transverse lines double, filled up with a hardly lighter colour; costal part as far as behind the postmedian broadly yellowish-white, in the posterior half with finely dark-striped subcostal veins; the median as far as the antemedian likewise white, by the same colour the maculae are encircled, the ring-macula is an oblong, oblique rectangle the lower proximal side of which is extended as a fine white stripe to the base; the ground of the cell between the maculae not darkened, no coniform macula; the undulate line is replaced by minute yellowish-white spots being crossed in the discal area by fine black internerval stripes. Hindwing white with a slightly brownish margin and veins. From Mexico (Zacualpan), in December.

tetratopis. **Rh. tetratopis** Dyar has lilac-grey forewings dusted with black in the basal area, behind the proximal transverse line, in the cell between the maculae and in the marginal area, with a broad light costal-marginal stripe; proximal transverse line light, at the proximal margin distally bent, the posterior line double, on the veins the proximal part is sharply dentate; maculae large, light, the ring-maculae above open, the coniform macula almost entirely black; the undulate line is dark and begins at the costal margin with a dark triangular spot, behind it the marginal area is likewise darkened except the apex. Hindwing brownish-grey with a discal spot and darker veins. Mexico (Guerrero Mill, Hidalgo), at an altitude of 9000 ft.

tocheata. **Rh. tocheata** Dogn. Forewing yellowish-brown, in the disc strewn with grey; the anterior transverse line is only marked by 2 black costal-marginal streaks, also the posterior line being very indistinct, but slightly lighter than the ground, bent; the maculae are strewn with grey in the jet-black ground, the ring-macula is round, above open; undulate line indistinctly dentate. Hindwing semi-diaphanous white, at the costal margin, apex and margin hued with grey. Colombia (Quindiu), taken in September.

capota. **Rh. capota** Sm. is brown, in the discal area darker purple brown, almost black with a whitish costal-marginal streak, with the brown maculae in the black ground and a black basal ray and black double transverse lines; undulate line only defined by the darker marginal area; ring-macula U-shaped, above open, reniform macula large, crescentiform. Hindwing smoky brown with a small discal spot. Expanse of wings: 29 to 32 mm. From Arizona.

flavicollis. **Rh. flavicollis** Sm. (8 h). Forewing blackish-brown with a reddish-yellow costal-marginal stripe, dusted grey in the marginal area, with a white-striped median; transverse line single; from the posterior line 3 reddish-yellow sagittae extend to the lighter undulate line on the upper median branch, the lower and upper radial branches, and from the black-encircled coniform macula an ochreous-yellow stripe to the same place; maculae grey, encircled with black in a jet-black ground. Hindwing whitish, towards the margin brownish-grey. Base of the collar in the ♂ yellow, in the ♀ grey like the costal stripe. From Canada to Colorado and Arizona.

biclavis. **Rh. biclavis** Grt. (= *demutabilis* Sm.) has a white body and forewing, tinted reddish-brown, particularly in the lower half of the cell, and below it in the centre of the proximal margin and in the marginal area, with a black basal area as far as the large coniform macula encircled with black; maculae white, confluent, reniform macula S-shaped; no transverse lines; veins in the marginal area of a pure white like the hindwing. The ♀ is dusted more brown, also the hindwing in the proximal half. From Arizona.

polingi. **Rh. polingi** B. & Benj. is closely allied to the preceding, the frontal projection is less rough; the forewing is much whiter, slightly tinted olive-brownish with white-striped veins, and both the upper maculae are entirely absent, instead of it there is a thick white spot at the lower angle of the cell, the median and inner-marginal vein on both sides bordered with black; subterminal area olive-brown, the marginal area more violettish-brown; hindwing white, at the margin brownish-grey. Expanse of wings: 34 to 39 mm. California.

lagena. **Rh. lagena** Grt. (8 g) is similar to *biclavis*, larger, with dark-striped veins in the marginal area, and more intense brown dusting, particularly from the reniform macula a stripe extends to the margin. Montana, Colorado, California, Utah, Arizona, Nevada.

Rh. querula *Dod.* is very similar and most probably only a race or form of the preceding without *querula*. a black band of the collar, a lighter and not grey ground-colour and with a postmedian line being extended into long streaks on the veins.

Rh. albalis *Grt.* (8 h) has white forewings dusted with grey and strewn with brownish, with black *albalis*. basal streaks in and below the cell, and small whitish maculae; the transverse lines are mostly absent except the undulate line being marked by 3 apical dark patches and 2 in the centre of the marginal area, with large, faded whitish spots on its inside; fringes white speckled with dark. Hindwing white with grey-dusted veins and marginal area. Utah, Nevada. — f. **actona** *Sm.* is smaller, with narrower wings, darker, particularly *actona*. the ♀♀, and the posterior transverse line is distinctly prominent. From Utah.

Rh. defectipes *Dyar*, described as *Cerapoda* and based upon 1 specimen without legs, according to *defectipes*. BENJAMIN belongs hereto and may only be a form of *albalis*. Grey with a white submedian patch, dark, white-striped veins; coniform macula filled up with white, no reniform macula; otherwise very much like the preceding. From Montana.

Rh. cloanthoides *Grt.* (8 h) is very similar, but much darker and more brown, particularly dark in *cloanthoides*. the marginal area behind the undulate line; the black basal rays are longer and of a deeper black; whereas in *albalis* the small white ring-macula is very conspicuous, this is here the case with a white spot at the base of the reniform macula. Colorado, Utah, New Mexico, Nevada, and Southern California.

Rh. insertans *Sm.* has dirty yellowish forewings and a black-banded collar; the black basal ray is *insertans*. coherent with the coniform macula; the anterior transverse line is only traceable near the proximal margin; the dark-pupilled ring-macula is oblong, connected with the reniform macula, and both are surrounded by a continuous black line, the cell before and behind them being black; below the reniform macula there is a black spot; the posterior transverse line is extinct; the light undulate line is dentate with black sagittae between. Hindwing white. Known from British Columbia.

Rh. aethes *Mab.* Forewing ochreous-yellowish white, except a costal-marginal stripe and the basal *aethes*. area dusted with light yellowish-brown; a black basal ray extends to the ochreous-yellow coniform macula being surrounded with black; both the upper maculae ochreous, surrounded with black, the reniform macula large, above open, on the median angular; posterior transverse line very indistinct; undulate line blackish with more or less distinct ochreous dots and black sagittae particularly towards the costal margin. Hindwing yellowish-white, towards the margin darkened. Expanse of wings: 34 mm. From Patagonia, the type in the Paris Museum.

Rh. t-nigrum *Gn.* (7 f) is very easily recognizable by the harpoon-shaped marking of the forewing, *t-nigrum*. being produced by the black median ray with a black crescent of the reniform macula mounted on it; the costal half as far as the undulate line is lighter than the other colour. Brazil (Novo Friburgo).

Rh. tolimae *sp. nov.* (7 f) may be a form of the preceding; it is larger, the costal half not lighter, the *tolimae*. median ray shorter, not extending beyond the much thicker reniform macula which is black with a deep red pupil; behind it a postmedian line is marked by black, strong dots on the veins; the undulate line is only marked by 2 subapical and one subanal black spot and does not extend so far towards the cell; forewing and hindwing with very strong black dots on the veins. Colombia (Monte Tolima), taken by FASSL.

Rh. irazuna *sp. n.* (7 f) probably hardly belongs hereto; it is still larger, the ground-colour of a somewhat *irazuna*. more olive shade, the black median ray is entirely absent, the veins are somewhat lighter and rather conspicuous owing to their being finely bordered with brownish; the cerise reniform macula is bordered with black and coherent with a black costal spot which surrounds the reniform macula in a flat bow as a dotted line being proximally shaded with brownish, and which extends from its lower end vertically to the proximal margin; in the centre of the cell there is a fine black dot. Hindwing of the ♀ dark brownish-grey with lighter fringes. From the Volcano Irazu (Costa Rica).

12. Genus: **Feltia** *Wkr.*

It is said to differ from the preceding by a vertical, ridge-like projection which, however, is only the case in about half the species, and by hair-tufts on the outside of the middle and posterior tibiae which are strongly spined. Antennae in the first species with long pinnae, then serrate with ciliary tufts, only in *clerica* and *agroica* plainly tuftedly ciliated.

F. gladiaria *Morr.* (= *morrisoniana* *Riley*) (8 i) is the only long-combed species with the median *gladiaria*. being on both sides striped white; moreover, all the closely allied species are very similarly coloured and marked; also in the marginal area the dark veins are striped white; the ♀ is usually much darker. Canada and Eastern States as far as Texas.

F. robustior *Sm.* (8 i) has a very small elliptical ring-macula, the black anterior transverse line is *robustior*. filled up with white, the posterior line being single, distally scaled white. Canada.

- venerabilis*. **F. venerabilis** Wkr. (8 h) is a monotonously greyish-brown species with a very dark, brown costal half, or also dusted quite brown, often with a pinkish tint with darker striped veins and entirely extinct transverse stripes. From Canada and the United States to Texas and California. — f. **arida** Cockerell is the race from Colorado with a much lighter ground-colour and in the ♂ almost white hindwings, only faintly smoky on the veins and margin.
- circumdata*. **F. circumdata** Grt. (8 i) is easily recognizable by the broad, light yellowish-brown area of the proximal margin being confluent with the similarly coloured area of the distal margin; the transverse lines are indistinct. Described from New Mexico.
- evanidalis*. **F. evanidalis** Grt. Forewing yellowish-white, dusted with reddish-brown and grey, with a white-striped subcostal, median and base of the inner-marginal vein; the cell and its surroundings darker brown; maculae yellowish-white, the ring-macula V-shaped and above open; the posterior transverse line is indistinctly whitish, proximally bordered by small black sagittae, distally by a lighter band extending to the black-spotted undulate line. Hindwing yellowish-white, at the margin brownish. Expanse of wings: 38 mm. California.
- edentata*. **F. edentata** Sm. is dark brown, in the disc dusted with reddish-grey, with dark-striped veins and almost extinct transverse lines; the posterior line is only marked by the contrast between the darker median area and the grey postmedian area; coniform macula very long and broad, ring-macula V-shaped, above open, reniform macula narrow, reddish-above broader than beneath, both in the blackish-brown ground of the cell; black sagittae are absent in the marginal area. Hindwing yellowish-white, in the marginal area dark. Expanse of wings: 37 mm. Washington.
- hudsoni*. **F. hudsoni** Sm. (9 b) is violettish-grey, suffused with a light brown, except the middle part of the costal margin, the proximal-marginal part and the space behind the postmedian line which is only recognizable by the contrast of the two colours and small black sagittae before it in the centre; coniform macula very long surrounded with black; ring-macula V-shaped, above open, grey; reniform macula ochreous, surrounded with black. Undulate line marked by small, black sagittae. Hindwing yellowish-white, at the margin brownish. From Canada.
- ducens*. **F. ducens** Wkr. (= *radiata* Harr., *subgothica* Auct.) (8 i) is striped flesh-coloured subcostally on the median and at the proximal margin, otherwise marked very much like the preceding; above the very long coniform macula a light stripe extends towards the anal angle. Hindwing whitish, at the margin brownish. Canada to Colorado. — The brownish larva being lighter on the dorsum lives on low plants.
- subgothica*. **F. subgothica** Harv. (= *jaculifera* Gn., *tricosa* Lint.) (8 i) differs from the preceding by the hindwings being darkened by a yellowish brown; the cell is filled up with black before, between and behind the maculae; before and on the grey undulate line a series of small black sagittae. Canada to Colorado. — Larva brownish on the dorsum lighter with broad, brown spots therein, laterally with a lighter line and a broader light band below it; it lives on low plants.
- herilis*. **F. herilis** Grt. (8 k) differs from the very similar *subgothica* by the black sagittae being entirely absent before the undulate line. From Canada and the North Eastern States. — Larva very much like that of the preceding, and living likewise polyphagous on low plants.
- pectinicornis*. **F. pectinicornis** Sm. (8 k) has the antennae with longer combs than *herilis*; the white-striped veins are on both sides bordered with dark, above the origin of the median veins there are short black stripes; the maculae are white, surrounded with black and pupilled brown. The whitish hindwings are dusted with brownish. From Texas.
- gravis*. **F. gravis** Grt. (= *vapularis* Grt.) (9 a) has a small, whitish-ringed ring-macula surrounded with black, which is distally extended into a point, grey dentate transverse lines, a black basal ray; behind the dentate grey undulate line, with black sagittae before it, the margin is darkened. Hindwing brownish-grey with white fringes. California. Perhaps the 4 following species are not distinct species, as there are scarcely any genital differences.
- musa*. **F. musa** Sm. is uniformly dusted bluish-grey on its chocolate ground, the thorax light grey; the transverse lines are single, the anterior line black, the posterior line finely dentate, brown, the area behind it uniformly grey without any trace of an undulate line or of sagittae; maculae like in *gravis* in a blackened ground of the cell. Hindwing uni-coloured brownish-grey. Described from New Foundland.
- vancouverensis*. **F. vancouverensis** Grt. (= *hortulana* Morr., *agilis* Grt.) (8 k) looks very much like *gravis* (9 a) from which it is easily discernible by the ferruginous head and by the lighter, reddish-grey inner-marginal area, the very dark costal-marginal area, and the much more contrasting markings. From Canada to California. Larva on a greenish ground watered with brown and yellowish-white, with a narrow light dorsal line; it lives on wild cherry-trees. — f. **semiclarata** Grt. has a still lighter whitish inner-marginal area much more contrasting with the dark costal margin. — f. **atha** Streck. has a longer coniform macula and a darker cell. — From Washington.
- volubilis*. **F. volubilis** Harv. (= *stigmosa* Morr.) (8 k) is a much darker, brown species with a darkened costal-marginal part with indistinct, black, dentate transverse lines, rather indistinct maculae and black streaks behind

the reniform macula; a black basal ray is continued into the narrow coniform macula; the undulate line is composed of whitish and black sagittae. Hindwing rather light. — f. *dentilinea* Sm. is presumably only the ♀ of it. *dentilinea*. Canada and United States from Massachusetts and New York to California.

F. aeneipennis Grt. (9 a) is a much lighter, more reddish-brownish species, similarly marked as the preceding, but without the dark streaks behind the reniform macula and without any sagittae in the marginal area. Hindwing yellowish-white, at the margin and on the veins brownish. Reported from Washington and California. *aeneipennis*.

F. obliqua Sm. on the whole resembles *vancouverensis* in the marking, whilst in the ground-colouring it varies between yellowish-brown and blackish-brown, with a ferruginous brown head and light grey mesothorax; costal-marginal area somewhat darker; transverse lines double, blackish, the posterior line finely dentate, the line distal to it only composed of dots on the veins or also entirely absent; maculae of the ground-colour, finely encircled with black, ring-macula oblong, in the black ground of the cell behind the reniform macula a black streak to the postmedian. Hindwing brownish-grey. Described from Canada. *obliqua*.

F. annexa Tr. (= *anteposita* Gn., *decernens* Wkr.) (9 a) is a most common species; reddish-brown, below the base of the cell and subapically dusted darker with strongly dentate transverse lines, the anterior ones being double, the posterior one single and less distinct, with small maculae surrounded by black, the ring-macula obliquely elliptical, above open, behind it a black streak to the reniform macula; the coniform macula is long and narrow; at the undulate line light and dark sagittae, behind them dark streaks on the veins. The ♀ is entirely suffused with dark, only in the costal part and in the marginal area lighter. Widely distributed in the United States through Central America to Chile and Argentina. — Larva brownish, on the dorsum with darker spots, light subdorsal and lateral stripes. It lives polyphagous on low plants. *annexa*.

F. malefida Gn. (= *inspinosa* Gn., *consueta* Wkr.) (9 a, b) is larger, lighter with a decidedly darker costal area and dark collar, very similarly marked, but with a very long ring-macula which almost touches the reniform macula, without the black streak between them; the ♀ is darker grey. Just as common and of the same range as the preceding. — Larva likewise very similar, the brown lateral area is above bordered with white. Likewise polyphagous. *malefida*.

F. pexa Berg. (= *ingoufii* Mab.) (9 a) is a large greyish-brown species with a black basal spot and a bent white stripe therein; behind the coniform macula a white stripe on the submedian fold; maculae small, whitish or brownish, pupilled with grey in a deep black cell, and also behind the reniform macula there is a black spot; no transverse lines; undulate line marked by white dots and black sagittae before them. Hindwing whitish, at the margin brownish. Patagonia. *pexa*.

F. canities Hmps. (Grt.) (9 b) is lighter than *annexa* (9 a) with a much shorter coniform macula, without the black cellular streak between the two upper maculae of which the ring-macula is round; the posterior transverse line is very distinctly dentate, on the veins very pointedly extended; undulate line marked by small whitish sagittae. Hindwing diaphanous white. Argentina. *canities*.

F. experta Wkr. (= *innotabilis* Wkr.) (9 b) has a more uniform dark brown colour; from the lower cell-angle a distinct median line runs to the proximal margin; otherwise marked like the preceding; hindwing transparent white, in the ♀ at the margin brownish. Peru. *experta*.

F. clerica Btlr. (= *carbonifera* Mab.) (9 c) has, like the following, only ciliated antennae and is a large, almost uni-coloured purple blackish-brown insect with a contrastingly ochreous-brown or grey scaled disc of the thorax; on the dark ground of the wings the markings are not very prominent, only at the proximal transverse line and in the reniform macula there are sometimes ochreous-yellow scales. Hindwing transparent white, at the costal and distal margins brownish, in the ♀ much more extensively brownish. — f. *purpurascens* Strd. has the head, thorax and forewing coloured more purple reddish-brown. — In f. *punta-arenae* Stgr. the head, thorax and forewing are more ochreous yellowish-brown, strewn and dusted with blackish, with correspondingly more conspicuous markings. Chile, Patagonia, Fuegia, and Falklands Islands. *clerica*, *purpurascens*, *punta-arenae*.

F. agroica Dogn. approximates the preceding and is dark brown on the head and thorax, grey on the abdomen. Forewing brown with a slight lilac reflection, very indistinct transverse lines, the beginning of which at the costal margin is marked by small lighter spots, and rather large maculae of the ground-colour, finely surrounded by black; the reniform macula crosses the cell-end downward. Hindwing dirty white, at the margin and veins grey. Expanse of wings: 33 to 38 mm. Costa Rica (Irazu). *agroica*.

13. Genus: *Agrotis* O.

It comprises the group of species with a smooth convex frons without a projection, with a broad triangular shape of the wings, the abdomen being often somewhat flattened, the anterior tibiae on both sides strongly spined, loose hair-tufts on the prothorax which is besides intermixed with hair, like the head, and covered with scales.

- badinodis*. **A. badinodis** Grt. (9 c) is a very easily recognizable species with long-combed antennae, of a dark brown ground-colour, a square blackish-brown spot between the maculae and a darkened band between the postmedian and undulate line. Canada to Texas.
- geniculata*. **A. geniculata** Grt. & Rb. (9 c) is a bluish-grey species suffused with brown, with double transverse lines and grey maculae surrounded with deep black; ring-macula above open; marginal area darker with a light undulate line therein. Hindwing light brown with a darker margin and whitish fringes. Canada, Northern, Eastern and Central States to Washington.
- docilis*. **A. docilis** Grt. (= *ingeniculata* Sm.) (9 c) is a very differently looking species reminding us rather of a Hadenid type. Grey, in some places dusted with brown, with double dentate transverse lines; coniform macula large and broad, brown, surrounded by black, the upper maculae grey, pupilled brownish in a somewhat darkened ground; undulate line irregularly dentate with brownish wedge-shaped spots behind it. Colorado.
- praefixa*. **A. praefixa** Morr. has ashy-grey forewings strewn with black, with a dark basal spot, finely dentate blackish-brown transverse lines and large light maculae; ring-macula obliquely elliptical, above open, reniform macula straight, narrow, with an uncommonly straight proximal margin, between them the cell is darkened; a faint, narrow, median shade is present; the light undulate line is proximally bordered by a broad dark shade. Hindwing brownish-grey, towards the margin darker. Expanse of wings: 42 mm. Rocky Mountains.
- violaris*. **A. violaris** Grt. & Rüb. (9 c). Forewing violettish-grey, scantily strewn with a reddish brown, in the discal area dusted with brown, with brown, slightly dentate transverse lines and a similar median shade; only the brownish-ringed reniform macula is more distinct, the undulate line scarcely noticeable. Hindwing brownish. Central States, Pennsylvania.
- opacifrons*. **A. opacifrons** Grt. (9 d) recalls the palearctic *subcaerulea* by the bluish-grey forewings being tinted purple-brown, with single, dentate transverse lines, a black streak between the maculae, often with a reddish-brown tint above it; undulate line very indistinct. Hindwing brownish-grey with whitish fringes. Frons of a deep black. From New York.
- aurulenta*. **A. aurulenta** Sm. (9 d) is similarly marked as the preceding, but quite light ochreous in its colouring; the posterior transverse line is marked by black dots on the veins, the veins in the marginal area being darker.
- aurulentoides*. Hindwings yellowish-white with fringes of a pure white. — f. **aurulentoides** Strd. (= ab. 1 *Hmps.*) is tinted reddish except the light bordering of the transverse lines, with an angular anterior transverse line and an irregular undulate line, the maculae in lighter rings and with brownish-grey pupils; a smaller race more from the east. — Nebraska, Colorado, Arizona.
- temperata*. **A. temperata** Schs. (9 c) is light greyish-brown or reddish-brown with a jet-black collar, on the forewing striated dark brown, towards the costal margin and subterminally dusted with ferruginous brown; transverse lines and median shade single, the maculae whitish in a jet-black cell. Hindwing brownish, somewhat diaphanous. Mexico, Costa Rica, and Brazil.
- semidolens*. **A. semidolens** Wkr. (10 d) is a large, bluish ash-grey species, on the forewing transversely striated in a deep red-brown, the striae flowing together into large spots before, in and behind the centre of the costal margin and in the centre of the proximal margin; no transverse lines, the reniform macula is an indistinct dark luna. Hindwing white with brownish veins, costal and proximal margins. From Mexico to Colombia and Brazil.
- ypsilon*. **A. ypsilon** Rott. (= *suffusa* Schiff., *telifera* Harr.) (9 d) is the well-known species being also distributed in the palearctic and Indo-Australian regions. In America its range extends from Canada through Mexico and Central America, Brazil and Peru to Chile and Argentina.
- collaris*. **A. collaris** Grt. & Rb. (9 d) recalls *badinodis* (9 c) in its colouring and marking, but it has no combed antennae and has narrower wings, with a jet-black collar. The reddish-grey ring-macula is V-shaped, above open, before and behind it the cell is filled up with a deep brownish black. From Canada to Colorado.
- c-nigrum*. **A. c-nigrum** L. (9 c) has been dealt with at large in the palearctic and Indo-Australian parts. This well-known species occurs in America from Canada down to Mexico.
- bicarnea*. **A. bicarnea** Gn. (= *plagiata* Wkr.) (9 c) looks somewhat like *c-nigrum*; the purple brown ground-colour is at the costal margin lighter ochreous reddish before the anterior and behind the posterior transverse line; between the maculae, which are ringed in grey and black, the cell is jet-black; the undulate line consists of small ochreous-yellowish spots with small black sagittae. Canada to Colorado. — Larva light brown with light dorsal and subdorsal lines, the former bordered with a dark brown, and with a broad lateral band bordered with white; it lives polyphagous on low plants.
- treati*. **A. treati** Grt. (9 d) differs from *bicarnea* by the rusty-reddish brightening at the costal margin being absent on the transverse stripes; the ground-colour is greyer, the reniform macula is also on the outside embedded in black, both the maculae are above and beneath open. Massachusetts.

A. conchis *Grt.* (9 f) is easily recognized by the light chestnut head and prothorax; the forewings *conchis*. are more purple reddish grey, scantily dusted with brown; in the black cell are the light chestnut maculae ringed in yellowish; the undulate line is distally bordered with a light grey. Hindwing yellowish-white, at the margin brownish. Colorado, New Mexico.

A. normaniana *Grt.* (= *obtusa* *Spr.*) (9 f) is a larger, light yellowish greyish-brown species with double *normaniana*. transverse lines filled up with light, an undulate median shade and the cell being filled up with dark brown before and between the maculae; behind the postmedian line there is often a row of black dots on the veins; the light undulate line is proximally somewhat darker with 2 black subcostal sagittae. Hindwing yellowish-brown. From Canada down to New York.

A. ditrapezium *Schiff.* (= *tristigma* *Tr.*) (Vol. III, t. 9 i) is likewise widely distributed in the palaearctic *ditrapezium*. region and has been dealt with in Vol. III, on p. 44. In America it only occurs in Labrador.

A. baja *F.* (= *smithi* *Snell.*) (9 f). This species being otherwise palaearctic (vol. III, p. 44) occurs *baja*. in Canada and the United States as far as New York in a hardly different form.

A. tenuicula *Morr.* is light greyish-brown, dusted reddish, with anterior double and posterior single *tenuicula*. transverse stripes; the two upper maculae are pupilled brownish, in light rings, and incompletely surrounded with black, between them an indistinct, undulate median shade extends to the proximal margin; the undulate line is situate near the distal margin, it is proximally tinted somewhat darker, at the costal margin with 2 black sagittae. Hindwing grey. New York.

A. acarne *Sm.* Head and thorax deep purple brown with contrasting flesh-coloured shoulder-covers. *acarne*. Forewing blackish-brown, with a purple reflection, in the costal part of the discal area lighter reddish, particularly in the reniform macula; transverse lines double, filled up with a lighter reddish, the inverted lines blacker; the maculae are large, surrounded with blackish, the ground between them somewhat darkened. Hindwing yellowish-grey with somewhat lighter fringes. Expanse of wings: 39 mm. Canada, Alberta.

A. bolteri *Sm.* (9 h) is reddish-brown, tinted violet with ferruginous and black markings; both the *bolteri*. anterior transverse lines are double, filled up with yellowish, the space between them dusted with brown in the proximal-marginal half, with a black transverse streak proximally scaled yellow in the cell; the posterior transverse line is also double, filled up with yellow; coniform macula large and broad, proximally brown, in a yellow ring and surrounded with black, and the two upper maculae, particularly the reniform macula, are likewise very large, in the brown centre besides with a white crescentiform streak; undulate line yellow, proximally shaded with a very dark tint. Hindwing smoky-grey with white fringes. Described from New Mexico.

A. plecta *L.* (= *vicaria* *Wkr.*) (9 f) is distributed in the palaearctic region as well as in Cape Colony, *plecta*. and has been described and figured in Vol. III, on p. 44, table 9 k. Found from Canada to Texas.

A. timbor *Dyar* (9 h) is a magnificent species from Mexico; purple black with a reddish-ochreous *timbor*. costal margin and lead-coloured upper maculae; the single, black transverse lines are almost entirely absent, but the undulate line is marked by some grey scales; head and basal half of collar reddish-ochreous like the costal-marginal streak. Hindwing light grey with salmon-coloured fringes. Mexico (Zacualpan).

A. vibora *Dogn.* (9 f) looks very much like *plecta* from which it differs by the white-striped median *vibora*. and by the entire absence of the posterior transverse line. Hindwing diaphanous white, at the costal and distal margins dusted with brown. Ecuador (Loja).

A. mizteca *Schs.* (9 f) is larger, purple brown with a yellowish-white costal-marginal stripe and a black *mizteca*. basal stripe below the cell; both the transverse lines are double, the maculae not lighter than the ground, at most surrounded with some whitish scales, the cell before, between and above them filled up with black. Undulate line traceable by small grey spots being bordered with black towards the base, particularly towards the costal margin. Hindwing white, towards the margin and on the veins brownish. Described from Mexico (Jalapa).

A. plectina *Maass.* (9 g) is brown with a yellow collar bordered with a dark brown; forewing with *plectina*. a yellowish-white costal-marginal stripe, a black basal ray, and white maculae surrounded with black, the ring-macula flowing together with the costal margin, the cell between black, also behind the reniform macula; median shade only traceable, posterior transverse line double, dentate; undulate line proximally shaded with dark, at the costal margin the darkest. Hindwing of a pure white. Ecuador, Colombia.

A. manabilis *sp. n.* (13 f) is allied to *plectina*, but it has a different, more smoke-grey colour of the *manabilis*. forewing with a reddish reflection and a but slightly contrasting costal margin which also comprises the basal area of the cell and basally also a part below it; no trace whatever of the transverse lines; subbasally, below the cell, a large, deep blackish-brown spot being continued into the distal two thirds of the cell, only interrupted by the large, reddish-grey, unmarked maculae terminating above open into the similarly coloured costal-marginal area. Behind the reniform macula there is besides dark dusting which is continued towards the apex and terminates subapically into a large, dark triangular spot. Hindwing diaphanous whitish with a dark brownish

costal-marginal and proximal-marginal part and brown veins as well as an interrupted brownish-grey ant-terminal line. Thorax steel-coloured black; collar ferruginous yellow. From the Quindiu Pass (Colombia).

oblimata. **A. oblimata** *sp. n.* (13 e) likewise resembles *plectina*, it is smaller, and at once discernible by the brownish-grey hindwing with a darker discal luna and a much darker margin; the light costal-marginal part gradually passes over into the slightly darker distal-marginal area which is a little lighter than the rest of the forewing; both the transverse lines are distinct, double; the small round ring-macula with a dark pupil, the reniform macula is also filled up with a darker colour. Collar and ventral side ferruginous brown. 1 ♂ from Mount Tolima (Colombia).

heterochroma. **A. heterochroma** *sp. n.* (13 f) is larger and has broader wings than the preceding, of a dark purple brown with a lighter costal-marginal stripe and marginal area, and the submedian discal area is also lighter as far as the broad median shade flowing together with the postmedian line; all the 3 transverse lines are very distinct, double, the posterior line dentate, filled up with a lighter tint and at the costal margin at its beginning marked by 2 distinct black double streaks each, the subbasal one here with an acute-angled projection distally; the indistinct undulate line is proximally bordered by brownish triangular spots, that situate at the costal margin being the largest and of a much darker purple brown; before the margin, between the veins, thick black triangular dots; the median, the base of both its branches and the submedian are distinctly striped lighter in the discal area. Hindwing brownish-grey with whitish fringes parted by a brownish line. One ♀ from Mount Tolima (Colombia) at an altitude of 4200 m, taken by FASSL.

incumbens. **A. incumbens** *Dyar* (9 g) is a large, beautiful species allied to *mizteca*; collar loam-coloured, broadly bordered with a velvety black, thorax and forewing red-brown, the latter towards the margin dusted with ochreous grey, with a broad loam-coloured yellowish costal-marginal stripe, black basal ray and single, almost straight transverse stripes, distally strewn with yellowish, proximally with black; the upper maculae are large yellowish rings, the reniform macula filled up with a somewhat more blackish tint. Hindwing brownish-grey Mexico (Vera Cruz, Morelos).

chabaudana. **A. chabaudana** *Dyar* (9 g) is allied to *incumbens*, but the ground-colour is not red-brown, but slate-coloured, very slightly dusted with brown, the cell between the maculae and before them of a velvety black; the two transverse lines are not dentate, almost straight, the distal one parallel to the distal margin. Hindwing brownish grey, towards the base lighter. Mexico (Zacualpan).

delicatessa. **A. delicatessa** *Dyar* (9 h) is a very pretty species, brown, in the basal and marginal areas lighter, in the discal area dusted with blackish, at the costal margin loam-coloured grey, with a black basal ray; the cell between the yellowish-brown maculae is black; both the transverse lines double, dentate. Hindwing whitish, at the margin and veins grey. Mexico (Zacualpan).

herculeana. **A. herculeana** *Schs.* (9 i) looks like a gigantic *normaniana*, tinted reddish-brown in the discal area. Transverse lines double, dentate, the ring-macula purple brown, V-shaped, the reniform macula yellowish-white, the cell between them black; behind the postmedian line black dots on the veins; marginal area behind the undulate line purple-blackish. Hindwing brownish-grey, towards the base lighter. Found in Mexico.

rosaria. **A. rosaria** *Grt.* (9 k) has ochreous-reddish forewings with darker veins, with double, very finely dentate transverse lines; maculae ochreous yellowish, in grey rings and surrounded with black, the cell between them dark brown, from where a median shade extends to the proximal margin; undulate line light. Hindwing yellowish white, towards the margin darkened. Canada to California.

cynica. **A. cynica** *Sm.* (= *perversa* *Strd.*) (10 a) differs from the similar *rosaria* by much broader forewings of a lighter reddish-brown ground-colour; the markings are almost the same, but the median shade is absent. From New York, Albany. — f. **perumbrosa** *Dyar* (= *umbrosa* *Dyar*) is a darker form of this species, but it may belong to *rubifera*.

calgary. **A. calgary** *Sm.* (9 k) looks likewise very much like *rosaria*, but it has no darker veins in the marginal area, and the ground-colour is a lighter red-brown dusted with grey; both the upper maculae are strewn with grey without a yellowish tint; there is a median shade and the ground of the cell between the maculae may be darkened or not; postmedian area darkened with a light undulate line in it. The yellowish-reddish hindwing shows traces of a darker postmedian line. Canada.

rubifera. **A. rubifera** *Grt.* (9 k) is also similar, of a darker chestnut-brown, intensely dusted with blackish, with a black dot in the basal area in the cell and with double transverse lines; maculae dusted with a brownish grey, the lower proximal angle of the reniform macula extended on the median, the ground before and between them darkened with black; behind the postmedian line dark dots on the veins. Hindwing ochreous-grey with light yellowish fringes. Northern Atlantic States.

dislocata. **A. dislocata** *Sm.* at first sight very much resembles *calgary* (9 k), but it is easily discernible by the different course of the median shade projecting distally on the median and closely approaching the postmedian line; the ground-colour is more bluish ash-grey, dusted with a reddish brown especially in the distal area, which is distinctly defined by the double postmedian from the colour of the discal area; maculae large, grey, ring-macula above open. Expanse of wings: 31 to 35 mm. Canada.

A. trumani *Sm.* is similar to *rubifera* (9 k), but distinguished by its more robust structure, more *trumani*, rectangular wings with an obtuse apex, more yellowish hindwings with a broad dark marginal band and a yellowish band therein; besides characterized by the single anterior and posterior transverse lines. Ground-colour yellowish ferruginous brown or more greyish-brown, maculae distinctly lighter than the ground. Expanse of wings: 30 to 34 mm. South Dakota.

A. plebeia *Sm.* (10 a) has a more dirty loam-coloured ground-colour strewn with blackish and inter-*plebeia*, rupted, indistinct markings which are, on the whole, arranged as in the preceding species; transverse lines double, maculae pupilled blackish, in light rings and surrounded with brown, the ring-macula elliptical; median shade faded; undulate line spotted yellowish, proximally bordered by small black spots. Hindwing brownish-grey, towards the base lighter. Canada to California.

A. jucunda *Wkr.* (= *ericensis* *Grt.*) (10 e). Forewing ochreous-yellowish grey, dusted with purple *jucunda*, reddish; transverse lines indistinctly double, the posterior line dentate with grey and black dots on the veins; maculae pupilled reddish, in grey rings, the lower half of the cell before and between them filled up with black. Hindwing yellowish-white, towards the margin brownish. In the form **perconflua** *Grote* the black colour in the *perconflua*, cell is absent. From Canada and the United States as far as New York.

A. phyllophora *Grt.* (9 k) looks very much like *jucunda* (10 e), but it is easily discernible by much *phyllopho-* darker brownish-grey hindwings, the basal half not being lighter; the chestnut-red head and thorax distinctly *ra*, contrasts with the forewing being dusted more reddish-grey; the dentate, double transverse lines are more pronounced, the cell between the maculae only somewhat darkened by the median shade running through between them. Canada to New York. — f. **hospitalis** *Grote* is probably only a less reddish form with a distinct *hospitalis*, coniform macula. Described from New York.

A. esurialis *Grt.* (10 d) has a much lighter, pinkish-brownish ground-colour and the cell before and *esurialis*, between the maculae darkened by a blackish brown, the posterior transverse line strongly dentate with dots on the veins behind it; the undulate line shows proximally at the costal margin a blackish-brown triangular spot, in the middle bordered by black dots. Hindwing light brownish pink. Washington. — Larva brown with black subdorsal longitudinal streaks and a darker lateral band; it lives polyphagous on low plants.

A. fennica *Tausch.* (= *intraeta* *Wkr.*) (Vol. III, t. 10 g) has been described in Vol. III, p. 47. It *fennica*, has long, extended wings of a dark brownish grey, the proximal-marginal area lighter yellowish or reddish, with double dentate transverse lines, a long coniform macula, whitish upper maculae pupilled brown and an undulate subterminal line with black sagittae before it which become longer streaks behind the cell. Hindwing diaphanous brownish. Alaska, Canada, and United States as far as New York. The larva is on its brown ground watered with black, with 3 rows of small whitish subdorsal spots; it lives polyphagous on low plants.

A. oblata *Morr.* (= *hilliana* *Harv.*) (9 k) is a pretty species easily recognizable by the more grey *oblata*, basal and postmedian areas and the decidedly chestnut-brown median and marginal areas, the large maculae surrounded with a very deep black. Basal ray and median shade present. From Canada to Nevada and California.

A. rosifunda *Dyar* is allied to *oblata* (9 k); forewing pinkish-brown, the broad marginal area uni-*rosifunda*, coloured; the antemedian line consists of 4 black bows with a straight line before it and a third segment below the cell; the postmedian transverse line is black dentate, proximally with a pinkish-brown doubling, distally bordered with whitish, behind it shaded with purple reddish, with a deeper red subapical spot; coniform macula distinct, ring-macula large, somewhat oblique, like the reniform macula which is proximally produced on the median, all the three in pinkish-brown rings and surrounded with black. Hindwing light yellowish-grey, at the distal margin tinted pink. Expanse of wings: 40 mm. Mexico (Hidalgo).

A. agis *Dyar* is allied to no other species, but it fits the best hereto. Head and thorax dark reddish-*agis*, brown, forewing ochreous-brown subbasally and in the marginal area, violettish-brown in the small basal area and in the discal area; transverse lines double, violettish-brown, slightly contrasting; the ring-macula is a large, narrow ring being above open, the reniform macula is very large, surrounded with black, in the lower end pupilled blackish; undulate line red-brown, finely dentate, proximally faded, at the costal margin dislocated. Hindwing brownish-grey with darker veins and loam-coloured yellowish fringes. Expanse of wings: 49 mm. Mexico (Zacualpan).

A. flavotincta *Sm.* (10 b). Forewing light purple brown with a light yellowish costal-marginal area *flavotincta*, and black basal ray; transverse lines single, black, on the averted sides bordered with yellowish; maculae brownish, in lighter rings, the ring-macula obliquely elliptical, the space before and behind it black; undulate line yellowish, proximally dusted with blackish. Hindwing ochreous-brown with yellow fringes. British Columbia, Vancouver.

- substrigata*. **A. substrigata** Sm. (10 a) resembles a *Feltia* from the group of *gladiaria*, and is recognizable by the yellowish-white area on the proximal half in the centre of the wing, the other colouring being purple brown; transverse lines filled up with yellowish-white; coniform macula large, surrounded with black; the upper maculae dark, surrounded with brownish, the reniform macula on the median proximally produced, before and between them the cell is black; undulate line only definable by the brown marginal area behind it. Hindwing ochreous-brown with white fringes. Canada.
- juncta*. **A. juncta** Grt. (10 b) is a small, purple greyish-brown species with black transverse lines, the maculae surrounded with a light colour and below flown together, and a black square spot between their upper half; coniform macula very long, surrounded with a light colour; undulate line hardly visible; hindwing light brownish, towards the base lighter. Canada. — f. **patefacta** Sm. (10 b) is a larger, more purple black form with a dark hindhead which is whitish in the type. Likewise found in Canada.
- subporphyrea*. **A. subporphyrea** Wkr. (10 b). Forewing purple reddish-brown, dusted with grey, with extinct darker transverse lines without any trace of maculae, with a light grey undulate line which is proximally somewhat darker. Hindwing ochreous brown. United States (Georgia).
- triphaenoides*. **A. triphaenoides** Dyar (= *orbipuncta* B. & McD.) (11 f) has loam-coloured yellowish forewings, except the marginal area dusted with reddish, with a large black reniform macula, a lighter distal transverse line scarcely bordered with dark, and a subterminal row of dots. Hindwing blackish with lighter fringes. Arizona to Mexico.
- larga*. **A. larga** Sm. is a large, plainly marked species, similar to *unicolor* (10 d) greyish-brown with a reddish shine and a contrastingly ferruginous brown head and collar; the single transverse lines are marked by dots on the veins, the maculae being surrounded by disperse black scales. Hindwing greyish-brown, towards the base lighter. Expanse of wings: 45 to 52 mm. From Arizona in June and August.
- atrifrons*. **A. atrifrons** Grt. (10 e) has grey forewings strewn with blackish, the disc and marginal area dusted with ferruginous brown, with black, single, finely dentate transverse lines; there is also a median shade being angular at the lower angle of the cell; maculae quite extinct, no undulate line; veins in the marginal area striped dark. Hindwing white with brownish margin and veins. Frons jet-black. From Colorado and Arizona.
- piscipellis*. **A. piscipellis** Grt. (10 d) is very much like *atrifrons*; ground-colour of forewing more grey, uniformly dusted with ferruginous brownish; no maculae nor median shade; undulate line marked by grey; frons and hindwing as in *atrifrons*. — f. **amia** Dyar is a quite deep red-brown form almost only marked by the light-spotted, proximally darker undulate line. Arizona. — f. **exculpatrix** Dyar is deep purple brown with distinctly black-striped veins, otherwise similarly marked, with a jet-black frons which is not black in the similar form: **fortiter** *corrodera* B. & McD. (10 b), and the veins are only very finely striped darker. Utah, Colorado. — f. **corrodera** Sm. is of a much brighter ferruginous brown colour, in the costal part somewhat lighter, more yellowish; the veins especially in the marginal area striped black; transverse lines only marked by small spots at the costal margin, the maculae by yellowish patches, the undulate line by small light spots between the veins. Frons not black. From Washington, Nevada, Colorado.
- cinereicollis*. **A. cinereicollis** Grt. (= *pallidicollis* Grt., *congrua* Sm.) (10 e). Forewing ochreous brownish, in the costal-marginal and distal-marginal parts greyer, with single, rather inconspicuous transverse lines and a small black basal ray; the upper maculae of a somewhat deeper tint, surrounded with ochreous, more or less confluent, the ground between them somewhat darker; the undulate line is only marked by the contrasting colours in the marginal area. Hindwing whitish, in the marginal area brownish. — f. **vocalis** Grt. (10 e) has greyish-white forewings, in the discal area below the cell often tinted somewhat reddish-brown, the cell blackened between the maculae. — f. **invenusta** Grt. is darker than *vocalis* with very indistinct markings. Both originate from Colorado and New Mexico. — f. **planifrons** Sm. (10 e), from British Columbia, is bluish ash-grey, in the discal area suffused with a claret-colour, with distinct transverse lines and a faded median shade, the undulate line only marked by the darker tint before it. The type *cinereicollis* originates from California.
- inopinatus*. **A. inopinatus** Sm. (10 e) is very similar to the two following species. It differs from *sierrae* by the entirely closed ring-macula, a more indistinct postmedian line and the absence of the coniform macula. Hindwing light greyish-brown. Colorado.
- sierrae*. **A. sierrae** Harv. (10 c) is on an average somewhat larger, with just as light though rather somewhat yellowish hindwings. Ring-macula above open, of the coniform macula there are indistinct traces and it is surrounded with black; reniform macula distally with a blackish spot; grey traces of the undulate line. Colorado and California.
- unimacula*. **A. unimacula** Morr. (= *haruspica* Grt., *grandis* Spr.) (10 b). Large, reddish greyish-brown, strewn with black, with single black transverse lines, the posterior line strongly dentate; maculae surrounded with black, ring-macula above open, reniform macula above and beneath open; undulate line light, proximally tinted darker. Hindwing yellowish-brown with more yellow fringes. Canada and United States, common.

A. clemens *Sm.* (10 c) is a species with narrower wings, of a much lighter yellowish greyish-brown *clemens*. ground-colour, similarly marked as the preceding, but the anterior transverse lines double, instead of the maculae there is only a dark discal spot, behind it 2 more punctiform spots; an undulate median shade is present; proximally to the light undulate line a row of small blackish sagittae. Hindwing light brown with whitish fringes. California.

A. unicolor *Wkr.* (= *clandestina* *Harr.*, *nigriceps* *Wkr.*) (10 d) differs from *clemens* by its darker greyish-brown forewing with a fine black basal ray; between the maculae often a black streak on the discal fold, also the posterior transverse line is double. Hindwing whitish, dusted with brown. From Greenland, Canada, and in the United States as far as New York and Massachusetts. — The larva is brown with a narrow whitish dorsal line and large brown oblique subdorsal spots; it lives polyphagous on low plants.

A. jalapa *Hmps.* (= *satyricus* *Drc.*) (10 d) is more dark red-brown, strewn with black, on the veins *jalapa*. striped black with indistinctly double dentate transverse lines, the small maculae encircled with black and connected by a black streak; in the marginal area black internerval streaks. Hindwing light brown. Mexico (Jalapa).

A. havilae *Grt.* (10 e) is smaller than *jalapa* and tinted more grey, very similarly marked, with a black *havilae*. basal ray, sharply dentate transverse stripes, the posterior one distally bordered with grey; the ring-macula is longitudinally elliptical, often connected with the reniform macula; undulate line grey, dentate, crossed by dark streaks on the veins; hindwing brown, with white fringes. Colorado to California.

A. limenia *Drc.* (10 a) is a very different large species without any similar allies. Of an ochreous, *limenia*. reddish or purple brown, very conspicuous by the jet-black, comma-like small spot at the base and the whitish, dark-marked reniform macula. Known from Mexico and Guatemala.

A. trisignata *Maass.* is on the head and thorax greyish-brown like on the forewing, with a wedge-*trisignata*. shaped black basal spot and very indistinct transverse lines; the ring-macula is small, elliptical, above open; the reniform macula only distally sharply defined, before and between both the cell is black. Hindwing light grey, with darker veins, at the margin brownish. Expanse of wings: 34 mm; from Ecuador.

A. glottuloides *Btlr.* (10 a) is blackish-brown, in the inner-marginal part brightened by a yellowish *glottuloides*. grey, with a black and grey basal ray; transverse lines indistinct, the posterior line dentate; maculae indistinctly white and encircled with black. Hindwing white with a mother-of-pearl lustre, on the veins and margin brownish-grey. Described from Chile.

A. repleta *Wkr.* (= *ypsilon* *Drc.* pro parte) (9 h, i) is a large species with narrow wings, with very *repleta*. characteristic markings and recalling the group of *Feltia malefida*. Reddish yellowish-grey with very sharply dentate double transverse lines, small maculae encircled with black and connected by a streak; before the undulate line black sagittae and a large subapical spot. Hindwing diaphanous white, at the costal and proximal margins brown. The ♀ is dusted dark brown below and behind the cell. Mexico to Brazil.

14. Genus: **Metalepsis** *Grt.*

Chiefly distinguished from *Agrotis* by the eyes being provided with long cilia; frons and vertex exhibit small hair-tufts, the collar shows a slight hood-shaped central ridge; the abdomen has lateral long hair-tufts. The ♂ antennae have short pinnae. All the rest agrees with *Agrotis*. Only 3 species:

M. cornuta *Grt.* (10 c). Thorax and forewing purple reddish brown with a contrastingly dirty white *cornuta*. head and collar, the latter with a brown central line; costal margin and marginal area are dusted with lilac grey; the fine single transverse lines are bordered with grey; maculae in whitish rings and dusted whitish, confluent; undulate line proximally bordered with brown, with dark streaks on the veins. Hindwing purple brownish. California.

M. cerphiphila *Dyar* is light yellowish with white veins, and with black small stripes subcostally, in the *cerphiphila*. cell and below it; the veins behind the cell towards the margin more black-striped and with a broader stripe above the inner-marginal vein. Hindwing dusted blackish with lighter fringes. Thorax with blackish hair. Expanse of wings: 29 mm. From Peru (Coropuna), taken in October at an altitude of 14 500 ft.

M. fuegensis *Hmps.* has greyish-white forewings being dusted reddish brown in the spaces between *fuegensis*. the veins, except the costal part remaining light; the veins are black-striped and, except the marginal area on both sides bordered with grey; in the basal area there are 3 black rays; transverse lines extinct; below the small white maculae there is a black stripe, the ring-macula is oblong elliptical, the reniform macula a minute luna; behind the upper cell-angle is a black streak, and in the subterminal area there are small black spots. Hindwing brownish-grey with white fringes. Expanse of wings: 30 mm. Fuegia.

15. Genus: **Eucoptoenemis** Hbn.

The genus is characterized by the stunted proboscis and above all by the short broad anterior tibiae with a long bent claw on the inside, and a short one outside at the end, laterally with rows of spines. The thorax is only clad with long hair, without scales.

- stenistis*. **E. stenistis** Hmps. (10 d) is a peculiar small insect with a somewhat concave costal margin; the forewing is brownish-grey with a dark costa and small blackish scale-spots at the proximal edge of the basal area and at the cell-end. Hindwing white, at the costal and distal margins dusted with brown. From Chile.
- fimbriaris*. **E. fimbriaris** Gn. (= *obvia* Wkr.) (10 f) is brownish-grey with double dentate transverse lines filled up with whitish, the posterior line composed more of dots on the veins, and with an undulate line being distally bordered with grey; the ring-macula is a black dot, the reniform macula a narrow ochreous-yellowish small
- sordida*. luna with a black central streak and bordering. Hindwing whitish with a brown marginal band. — f. **sordida** Grt. is darker, more reddish-brown. United States (Massachusetts).
- dapsilis*. **E. dapsilis** Grt. has light ash-grey forewings strewn with blackish; the transverse lines are marked by black dots on the veins, the upper maculae are small dark spots; the undulate line is only marked by a slight contrast of the colour. Hindwing light brownish-grey, towards the margin darker. Expanse of wings: 31 mm. Described from Florida.
- tripars*. **E. tripars** Wkr. (= *worthingtoni* Grt.) (10 f) is similar to *dapsilis*, larger, more brownish in the colour; the maculae are whitish small spots marked black, the ring-macula is only a dot; the black dots on the veins of the postmedian line are distally white; undulate line quite indistinct. Hindwing light brownish, in the darker red-brown ♀ brown. New York and Indiana.
- aphronus*. **E. aphronus** Dyar (10 e) is considerably larger, of a variable colouring, changing from grey to brownish, strewn with a darker shade, particularly in the marginal area; the dentate transverse lines are double; the large maculae are finely encircled with a light colour in the jet-black cell; undulate line light, proximally at the costal margin bordered by a dark triangular spot. Hindwing grey with light fringes. Mexico (Zacualpan, Cuernavaca), in June.

16. Genus: **Onychagrotis** Hmps.

Distinguished from the preceding genus by differently armed anterior tibiae exhibiting inside two and outside seven claws, the longest at the end. In the thoracal hairing coarse scales are intermixed. Only one typical species:

- rileyana*. **P. rileyana** Morr. (10 g). Forewing lightbrown, densely strewn with a darker colour, with double, finely dentate transverse stripes and darker maculae in grey rings and surrounded with black, and with a lighter undulate line. Hindwing white, on the veins and margin brownish; in the greyer ♀ they are darker brown. From the United States, from New York to New Mexico.

17. Genus: **Pseudorthosia** Grt.

With a well developed proboscis, and discernible from the other genera by a rough, feeble projection on the frons. Thorax long-haired and without tufts, abdomen above at the base long-haired. Only one species:

- variabilis*. **P. variabilis** Grt. (10 c) is of an ochreous, reddish or dark brown; transverse lines distinct or indistinct, single, bordered with a lighter colour, and there is also a faded median line; the maculae are darker, light-ringed small spots or also quite effaced; the undulate line is proximally bordered with a darker colour. Hindwing
- pallidior*. yellowish, more or less dusted with brown. Canada to Colorado and California. — **pallidior** Cockerell is a lighter form, otherwise not different.

18. Genus: **Epipsilia** Hbn.

Proboscis developed; palpi obliquely ascending, long-haired. Frons smoothly rounded, head and thorax long-haired; anterior tibiae normal, laterally spined, without any claws at the end. In the veins no very essential difference from the other genera. A large genus, also with many tropical species.

- gravida*. **E. gravida** Mab. Anterior body and forewing olive-brown with a black and red-brown basal ray; the anterior transverse line is only marked by small black strigiform spots at the costal margin and on the median, the posterior line being entirely absent; the maculae are coloured like the ground, before and between them marked black, and with black stripes on a red-brown ground behind the reniform macula. Hindwing dark brown with a darker, spotted marginal line. Expanse of wings: 44 mm. From Patagonia and Fuegia.

E. perdita *Stgr.* (10 g) is much smaller, red-brown, with a light grey costal-marginal part and median; *perdita*. only the posterior indistinctly double transverse line is present; the small grey maculae are coherent with the costal area. Forewing greyish-brown. From Fuegia.

E. bicolor *Mab.* is somewhat larger than *perdita* (10 g), of a deeper red-brown with a lighter costal- *bicolor*. marginal part and veins; the cell before and between the maculae is decidedly black; behind the undulate line the margin is of a purer grey. Hindwing dark brown with ochreous yellowish fringes. The ♀ has the costal area greyer, the ring-macula larger and coherent with the costal-marginal part. Expanse of wings: 38 mm. Patagonia and Fuegia.

E. typhlina *Mab.* has olive-brown forewings with a black and red-brown basal ray as in *gravida*, *typhlina*. and with a similar longitudinal stripe in the lower half of the cell, another at the proximal margin from the base to beyond the middle, and a third above the inner-marginal vein extending from before the middle to the margin; transverse lines and maculae entirely absent; small black antemarginal sagittae. Hindwing dark brownish-grey. Expanse of wings: 40 mm. Patagonia.

E. dissociata *Stgr.* (10 g) is grey, dusted with brown, with a reddish-brown costal part, cell and sub- *dissociata*. median fold; the indistinct transverse lines are finely dentate; the maculae small, dark, in light rings and surrounded with black; undulate line marked by small dark sagittae. Hindwing brownish-grey with yellowish-white fringes. Patagonia.

E. interclusa *Wkr.* (10 h). Greyish-brown, strewn darker; transverse lines only marked by small *interclusa*. spots; the maculae are quite effaced, between them a quadrangular black spot; undulate line effaced, darker. Hindwing yellowish-brown, towards the margin darker. North-western coast of America.

E. coppingeri *Btlr.* (10 h) is a larger species with rather narrow wings, dark red-brown with a lighter *coppingeri*. costal area and veins; transverse lines indistinctly darker, the posterior line dentate; maculae lighter in a dark ground with traces of a median shade between them; the undulate line is proximally bordered by small dark brown sagittae. Hindwing dark brown. Patagonia.

E. frigida *Mab.* has bright red-brown forewings dusted with a violettish grey except the discal area, *frigida*. the marginal area being strewn with a dark colour; transverse lines single, dentate, maculae small, bordered with a lighter colour. Hindwing reddish grey. Expanse of wings: 44 mm. Patagonia.

E. bollii *Grt.* (= *hilaris* *Grt.*) (10 h). Greyish-brown, strewn with whitish, with whitish, feebly bent *bollii*. transverse lines, the maculae marked by small black quadrangular spots before and between them. Hindwing yellowish greyish-brown, towards the base lighter. Known from Texas.

E. fungorum *Grt.* (10 f) is a large, reddish ochreous species with 2 single blackish transverse lines *fungorum*. and a quadrangular blackish spot in the cell-end. Hindwing ochreous-reddish. United States, Eastern and Central States.

E. madida *Gn.* is larger than *fungorum*, of the same colouring, with single darker transverse lines, *madida*. the posterior line being light with dark dots on the veins; maculae yellowish-brown with lighter rings; undulate line composed of small dark lunae. Hindwing diaphanous white, with darker veins and reddish fringes. Brazil.

E. perotensis *Schs.* (10 f) is allied to *madida*, but not synonymous, it is larger, with broader wings, *perotensis*. lighter maculae, between which the ground is somewhat darker, also the transverse lines lighter, the dots on the veins of the distal line very faint; the hindwings are lighter, too. Mexico.

E. hahama *Dyar* (9 g) is very similar, strewn more with brownish, the transverse lines light, the *hahama*. proximal line almost straight, the distal line rounded, before it dark dots on the veins; the large, lighter-ringed maculae in a darker ground; the subterminal line is undulate, before it a darker shade at the costal margin. Hindwing whitish, proximal margin and fringes tinted pink, costal margin, veins and a discal spot ochreous-brownish. Mexico.

E. pyrsogramma *Dyar.* Anterior body and forewing reddish grey with an olive tint; collar posteriorly *pyrsogramma*. jet-black; transverse lines broad, light, finely bordered with a darker colour, the anterior line almost straight, the posterior line bent in the costal-marginal part; costal margin, proximal margin, fringes, a stripe on the submedian fold, in the base of the cell, and the pupils of the 2 upper maculae are orange-red; between the maculae a quadrangular black spot; undulate line brown, spotted. Hindwing greyish-brown, in the disc lighter with orange fringes. Expanse of wings: 44 mm. Mexico (Hidalgo), recently also taken in Arizona (Huachuca Mts.).

E. molepa *Schs.* (10 f) is brownish-red, strewn darker, with rows of black dots on the veins instead *molepa*. of the transverse lines and blackish traces of the reniform macula; no other markings. Hindwing of a pure white. Brazil.

E. cyminoprictis *Dyar* (10 h) is a very different, large, uni-coloured dust-grey species with 1 or 2 *cyminoprictis*. blackish cellular dots, indistinct postmedian dots on the veins, as well as black marginal dots. Hindwing whitish with darkened veins. Mexico (City) in August.

E. amphipyroides *sp. n.* (13 e) is finely strewn darker on a light reddish-grey ground; of the markings *amphipyroides*. only some small costal-marginal spots are traceable, a small, slightly darker crescentiform spot marking the

reniform macula, and the irregular, lighter undulate line which is proximally bordered with a slightly darker shade. Hindwing white, very faintly tinted yellowish, with a small grey discal luna and hardly noticeable marginal streaks. According to 1 ♀ from Mt. Tolima (Colombia), taken by FASSL.

- trifasciata.* **E. trifasciata** *Hmps.* (11 a) is a very easily recognizable insect owing to the lilac-white, brown-dusted and black-strewn forewing with a black basal ray; veins white, bordered with brown. Transverse lines and maculae absent altogether; a black stripe extends above the median to the margin, another is subcostal, and a third browner stripe above the inner-marginal vein. Hindwing brownish. South East Peru (Aqualani).
- atristriata.* **E. atristriata** *Dogn.* Forewing light brown, strewn reddish with a lighter costal part; transverse lines only marked by dots, also the undulate line which is subapically accompanied by a darker shade; maculae bordered with light ochreous-reddish. Hindwing blackish-grey, in the disc and at the proximal margin lighter. Expanse of wings: 35 mm. Chile (Punta-Arenas).
- diagramma.* **E. diagramma** *Jones* is ochreous-brown, strewn darker; on the median a dark longitudinal band extends from the base to the posterior transverse line; the spotted postmedian line runs very obliquely and dies away in the darker apical part; instead of the maculae there are only two dark dots; in the distal half of the proximal margin a dark shade. Hindwing diaphanous. Expanse of wings: 38 mm. Brazil.
- haesitans.* **E. haesitans** *Wkr.* (10 h) has greyish-brown forewings scantily strewn with blackish; the anterior transverse lines are only marked by dots, the posterior line is dentate; between the maculae which are coloured like the ground there is a black spot shaped almost like an X. Hindwing brown, towards the base lighter. Rocky Mountains.
- manifesta.* **E. manifesta** *Morr.* (= *impingens* *Dyar*) (10 g) is similar, of a darker greyish brown with the same marking, with a grey, indistinct undulate line which is proximally bordered with a darker shade. Hindwing greyish-brown. United States (New Jersey, New York).
- salicarum.* **E. salicarum** *Wkr.* (= *claviformis* *Morr.*, *orilliana* *Grt.*) (10 g) is unmistakable by the reddish or bluish-grey basal half and the more red-brown distal half, defined by the almost rectangularly broken median shade; transverse lines single, the posterior line dentate; undulate line distinct, light grey, proximally shaded with ferruginous brown. Hindwing reddish-brown with whitish fringes. Canada, United States.
- monochromateia.* **E. monochromateia** *Morr.* (10 i) is of a plain red-brown with 2 very much nearing transverse lines, without any trace of maculae or other marking. Hindwing dark greyish-brown with whitish fringes. New Hampshire, Massachusetts.
- ochricraspia.* **E. ochricraspia** *Hmps.* has deep red-brown forewings, more or less dusted blackish, with a light ochreous-yellowish costal-marginal part which flows together with the similarly coloured maculae; traces of grey transverse lines, a similar undulate line is somewhat more distinct. Hindwing reddish brownish-grey with a darker discal spot and ochreous-reddish fringes. Expanse of wings: 40 to 44 mm. Falklands Islands.
- xanthostola.* **E. xanthostola** *Mab.* (= *dalei* *Btlr.*) (10 i) is of a monotonous brownish ochreous colour, with some blackish striae, the margins more reddish; markings quite indistinct except faint traces of the reniform macula and dots on the veins instead of the postmedian line. Hindwing whitish, dusted with a greyish brown, at the costal margin and in the marginal area darker. Falklands Islands, Patagonia.
- colima.* **E. colima** *Schs.* (10 i) is orange, in the areas of the proximal and distal margins dusted and striated in a reddish brown, with single, dentate transverse lines; the maculae are red-brown, in yellow rings, the reniform macula shaped almost like a Z. Hindwing diaphanous white with yellowish veins, proximal and distal margins. Mexico.
- bistrigata.* **E. bistrigata** *Maass.* (10 i). Forewing purple red-brown with a black basal stripe below the black cell as far as the centre of the wing; transverse lines quite indistinct, the small maculae purple brown; undulate line only marked by the blackish marginal area situate behind it, dentate. Hindwing light brown with darker veins. Colombia, Ecuador.
- elevata.* **E. elevata** *Sm.* is reddish-grey with single dark transverse stripes; the maculae are light grey, surrounded with black, the ring-macula oblong, on both sides extended, the reniform macula a minute luna; the reniform macula is yellowish, surrounded with black, and before it there is a yellow stripe as far as the base; undulate line grey with brown diffuse spots. Hindwing brownish-white, towards the apex darker. Expanse of wings: 35 mm. Colorado.
- littoralis.* **E. littoralis** *Pack.* (10 i) has reddish-brown forewings with almost extinct darker transverse lines and an oblique red-brown median shade on which the small reniform macula rests as a small dark spot; the ring-macula is an indistinct ferruginous brown ring; the undulate line is marked by ferruginous brown shading on the inside. Hindwing dark brown with lighter fringes and a darker small discal spot. — **pectinata** *Grt.* (= *ferruginoides* *Sm.*) is lighter ferruginous brown, with more distinct markings. — Canada, Montana, Colorado.
- fishi.* **E. fishi** *Grt.* (10 i) is purple brown, dusted grey and strewn with a darker brown, with darker transverse lines and median shade; the upper maculae with greenish-grey pupils and surrounded with blackish; the undulate line consists of grey and dark dots. Hindwing greyish-brown with reddish fringes. United States (Maine).

E. cinerascens Sm. (10 i) is lighter than the preceding, greyer, the posterior transverse line is distinctly *cinerascens*, dentate, the macula darker brown, in grey rings and surrounded with black; the indistinct undulate line is grey, proximally bordered with a darker brownish-grey, the darkest below the costal margin. Hindwing greyish-brown with whitish fringes. Washington and California.

E. wockei Mschr. Head and thorax chestnut-brown, collar striped whitish, at the end black. Forewing *wockei*, greyish-brown, in the discal area dusted reddish with finely dentate single transverse lines, the cell filled up with black and grey maculae in it, the ring-macula V-shaped, above open, the reniform macula inwards produced on the median, the long grey coniform macula surrounded with black; undulate line quite indistinct. Hindwing light greyish-brown with a darker discal luna and transverse line behind it. The ♀ is greyer without the reddish tint. Labrador, New Hampshire, known also from the palearctic region.

E. scropulana Morr. (= westermanni Hmps.) (8 b) is quite similar, more variegated, lilac grey and *scropulana*, chestnut-red, with a black wedge-shaped spot before the coniform macula. From Greenland and Canada. — The form **möschleri** B.-Haas (13 g) is still more contrastingly coloured and marked. *möschleri*.

E. cinerea Stgr. (= okakensis Pack.) (10 i) has formerly been confounded with the following *tecta*. *cinerea*. Compared with *tecta*, it is on an average smaller, squatter, greyer, the postmedian line always very near to the undulate line, so that the intermediate area is very narrow; hindwing darker with a more distinct discal luna and postmedian line. The main difference are the different genitals as DAMPF stated (Berl. Ent. Zeitschr. 1909, p. 128). It is mostly overlooked that of *cinerea* there also occur forms with a reddish-brown tint and of *tecta* greyer forms, so that the colouring alone is not a certain mark of distinction. Labrador, also from Mt. Washington (New Hampshire).

E. tecta Hbn. (= carnea auct.) (10 k) is marked the same as *cinerea*, generally somewhat larger *tecta*, and of a brighter reddish brown; as to the difference we refer to what has been said in *cinerea*. — **roosta** Sm. *roosta*. is a much more variegated form of a brighter ferruginous red colour from Alaska. According to recent examinations by Dr. CORTI it is very doubtful whether the palearctic *tecta* occurs at all in America, in which case the name would have to be replaced by *roosta*.

E. terrifica Sm. (10 k) is likewise very similar, more slender, with narrower wings, more whitish, *terrifica*, strewn with a brownish grey, with white hindwings being only somewhat brownish at the costal margin. Colorado.

E. quadrangula Zett. (= rava H.-Schäff., umbrata Pack.) (10 h, and Vol. III, t. 12 e) is darker and *quadrangula*, of a more monotonous greyish-brown, more densely strewn with dark, otherwise very similarly marked as the preceding, but with a smaller, rounder, closed ring-macula. Hindwing dark brownish-grey with yellowish-white fringes. Greenland, Labrador, Nova Scotia, also found in Iceland (comp. Vol. III, p. 52).

E. flavicosta Wallgr. (= magellanica Btlr.) (10 g). Large, red-brown with an ochreous-yellowish *flavicosta*, costal-marginal stripe and equally coloured maculae being confluent with it; the transverse stripes are quite indistinct, the posterior stripe dentate. Hindwing light reddish-brown with lighter yellowish fringes. From Patagonia.

E. castra Schs. (10 k) is a very different insect and very easily recognizable by the yellowish- *castra*, white ground-colour with the long black longitudinal ray and two black cellular dots above it. Brazil (Castro, Paraná).

E. rufisigna Hmps. is ochreous-whitish, scantily strewn with black, without transverse lines; the ring- *rufisigna*, macula is a black dot, the reniform macula quadrangular, red-brown, surrounded with black, indented on the median; the apex of the wing is parted by an oblique, faded red-brown shade; on the margin there are black dots. The whitish hindwing is tinted reddish-brown with a darker discal dot. Expanse of wings: 52 mm. South Eastern Peru.

E. cirphioides Schs. is similar to *rufisigna*, much smaller, of a somewhat more reddish tint, with a *cirphioides*, faint dark basal ray, the median and the lower radial branch are finely dark olive-brown; the reniform macula is round, more blackish grey; the postmedian line is marked by dark brown dots on the veins; the marginal area is shaded with brownish, with black marginal dots, an oblique subapical shade and a dark stripe below the lower radial branch; above the maculae dark costal-marginal shades. Hindwing white, at the costal margin and apex brownish-grey. Expanse of wings: 32 mm. Costa Rica (Juan Vinas).

E. glaucochroa Dogn. is likewise very similar to *rufisigna*, of a more greenish-ochreous tint, smaller, *glaucochroa*, with entirely white hindwings in both sexes, and a reniform, not quadrangular distal macula. Expanse of wings: 42 to 45 mm. South Eastern Peru.

E. tiniloides Dogn. (♂ = sagitta Dogn.) (10 k). The ♀ is brownish-grey with a white median and *tiniloides*, dark brown other veins on each side striped grey; the inner-marginal and distal-marginal area dusted reddish, with a black basal ray, discal spot and postmedian dots on the veins; the apex of the wing is parted by a somewhat darker shade, another shade being situate above the anal angle. Hindwing diaphanous white with dark marginal dots. The ♂ has a more straw-coloured ground-colour with but slightly darkened veins and a reddish-brown stripe in the lower cell-end and more distinct brown spots of the marginal area. Ecuador (Loja).

- amina.* **E. amina** Dogn. (11 a) is larger, except the yellowish-grey costal area dusted with a reddish brown, without a discal spot and basal ray, the veins striped more whitish. Likewise from Ecuador.
- leucaniiformis.* **E. leucaniiformis** Zerny (11 a). Forewing light yellowish-brown, strewn with blackish, without transverse lines and maculae, only with a blackish dot at the cell-end; along the median a blackish-brown ray being continued to the margin; the veins of the marginal area are somewhat darkened; on the margin there are black internodal dots. Hindwing greyish-brown with lighter fringes. Bolivia (Cuesta de Cillutincara).
- cirphidia.* **E. cirphidia** Hmps. Grey, dusted with a reddish brown, densely strewn with a dark brown, with a dark brown basal stripe below the median, a small black spot in the centre of the cell, and two at the cell-end; from here a white stripe being above and below bordered with red-brown extends on the discal fold to the distal margin; a red-brown oblique patch extends proximad from below the apex. Hindwing light reddish-brown with white fringes. Expanse of wings: 40 mm. Peru (Acopampa).
- leucaniades.* **E. leucaniades** Hmps. is of a brighter red-brown colour, scantily strewn with black, with a blackish stripe above the end of the median, being continued above the lower radial branch towards the margin; in the centre of the cell there are two small black dots, on the transverse vein there is one; on the margin there are minute black spots. Hindwing reddish brownish-grey. Expanse of wings: 36 mm. Peru.
- pyronota.* **E. pyronota** Hmps. has whitish forewings being dusted with a bright chestnut-red colour except the costal-marginal part, a white-striped median and brown-striped veins in the marginal area; below the median there is a strong black basal ray, above it in the distal cell-end another black stripe, in the centre of the cell a black dot, at the end a little luna; instead of the postmedian line there is a series of black dots on the veins, a blackish shade on the discal fold at the margin, and a similar one below the upper median branch. Hindwing of a pure white, with a slightly brownish proximal margin, black discal dot and marginal streaks. Expanse of wings: 30 to 34 mm. From Peru. — **derufata** form. nov. (= ab. 1 Hmps.) has the forewings barely dusted with chestnut.
- leucanidia.* **E. leucanidia** sp. n. (10 k) is ochreous yellowish-white, in the basal half dusted with chestnut, distally turning more brownish-grey, except the broad light costal area and the median; the ring-macula is a black dot encircled somewhat yellowish, on the transverse vein a larger black spot; in the distal half all the veins are dark, on both sides bordered with yellowish-white, and between them with light internodal stripes; a postmedian row of black dots on the veins, and on the margin a row of black dots. Hindwing diaphanous white with a blackish discal dot and a marginal row of thick black dots. Thorax above red-brown, abdomen ochreous, above with a broad blackish-grey band. 1 ♂ from the Cuesta de Cillutincara (Bolivia), at an altitude of 3500 m, captured by FASSL.
- plectistriga.* **E. plectistriga** sp. n. (11 a) is very similar to *pyronota*, but it is of a deeper and more equable chestnut colour, with an ochreous-yellowish costal stripe, the veins in the distal area bordered with a slightly lighter shade; below the basal half of the median a jet-black longitudinal stripe, the cell deep purple brown; the ring-macula is coherent with the costal stripe and pupilled black, the reniform macula is a blackish crescent from the lower end of which, above the lower radial, a dark brown longitudinal stripe extends to the margin, directly above it is a purple brown triangular spot, the apex turned towards the cell; a postmedian double row of black dots; purple brown marginal triangles are continued like rays towards the disc. Hindwing of a pure white, diaphanous. Collar yellowish, bordered with a velvety black, thorax red-brown. Abdomen yellowish-grey with a ferruginous yellow anal tuft. From Mt. Tolima (4200 m), Colombia, discovered by FASSL.
- lacteicosta.* **E. lacteicosta** Hmps. Forewing as in *plectistriga*, but the veins of the marginal area are not striped darker; between the two black cellular spots there is above the median a black streak being feebly continued distally above the lower radial; all the rest as in *pyronota*. Expanse of wings: 32 to 34 mm. Peru (Aqualani).
- nezia.* **E. nezia** Schs. has yellowish-reddish forewings and a somewhat more whitish anterior body with a velvety black line on the collar; the forewing exhibits a long black basal ray; the small maculae are somewhat lighter than the ground, connected by a black streak which also extends yet for some distance before the ring-macula; on the margin dark dots. Hindwings demi-transparent white. Expanse of wings: 35 mm. Costa Rica (Volcano of Turrialba).
- suboleagina.* **E. suboleagina** Dogn. (10 k) has a light olive greenish-grey forewing with ochreous brownish markings: two dots, one near the base, another in the centre of the cell, a faded median line, a dentate posterior transverse line being often only composed of dots, an undulate line, and a marginal line of dots; the proximal half is somewhat more densely dusted with brown. Hindwing semi-diaphanous white with a grey costal margin and apex. Expanse of wings: 29 to 33 mm. Colombia, from the Quindiu Pass (3500 m), in September.
- livescens.* **E. livescens** sp. n. (13 c) is very similar to *suboleagina*; it is larger, as far as the postmedian line of a light bluish ash-grey colour, from there to the distal margin more reddish-grey, very scantily strewn with a blackish brown, with but one round black dot in the centre of the cell; only the posterior transverse line is marked by longish black dots on the veins, the undulate line by single, more dense accumulations of dark scales;

before the fringes a row of very fine black dots. Hindwing white, in the disc somewhat diaphanous and feebly iridescent. 1 ♀ from the Cuesta de Cillutincara (Bolivia), by FASSL.

E. centripuncta *sp. n.* (13 e) is neither dissimilar and has the same shape of the wings. Forewing light ash-grey, somewhat more intensely strewn with black, at the costal margin at the beginning of the 3 transverse lines marked with 2 thick blackish streaks each, otherwise the transverse lines are only now and then fragmentarily traceable, the posterior line distally with fine black dots on the veins; the ring-macula is a circular black spot, the reniform macula only distally bordered by a fine blackish line; undulate line indistinctly lighter, dentate, proximally bordered with red-brown, beginning at the costal margin with a larger and darker red-brown triangular spot, behind it only slightly darkened, on the margin with fine black triangular dots. Hindwing of a pure white, diaphanous. The palpi are jet-black except the light terminal joint, the vertex very light greyish-white. 1 ♂ from the Quindiu Pass (Colombia). *centripuncta.*

19. Genus: **Trichophotia** *Hmps.*

The most conspicuous mark are the hairy eyes which occur but rarely among the *Agrotinae* (*Ala Stgr.*, *Trichorthosia Grt.*). The other marks agree with the neighbouring genera. The second palpal joint is rather long, in front broadly scaled, the terminal joint short, straightly porrect. Frons smooth, with tufts of scales between the antennae; thorax clad with hair and scales, in the centre with tufts; abdomen at the base roughly haired. All the tibiae are spined. Forewing long and narrow with a rounded apex. Only 2 species are known:

T. homogenea *Hmps.* Forewing greyish-brown, strewn with blackish-brown and in some places tinted brown with a black basal ray and double undulate transverse lines, the posterior line distally with dots on the veins; the maculae are small, encircled with black, the reniform macula pupilled blackish-brown, the ground between them brown with 2 black streaks and a black streak before the ring-macula; behind the postmedian line blackish-brown dusting at the costal margin; at the margin, on the discal fold, a blackish-brown wedge-shaped spot, another below the upper median branch. Hindwing white with a blackish discal spot. — **acopampana** *Strd.* (= ab. 1 *Hmps.*) has more monotonously brown forewings, with less prominent cellular and postmedian dark markings. Expanse of wings: 30 mm. — From Peru. *homogenea.*
acopampana.

T. cervina *Dogn.* is light reddish-brown, on the veins and in the costal-marginal part strewn with whitish, with similar transverse lines as the preceding; the ring-macula is oval, in the centre whitish, the reniform macula indistinct, with an indistinct median shade as far as the median; undulate line composed of small black internerval spots. Hindwing yellowish-white. Expanse of wings: 30 mm. Colombia (Quindiu Pass). *cervina.*

20. Genus: **Lycophotia** *Hbn.*

A larger genus characterized by its smooth frons without projections, with round hairless eyes, head and thorax smoothly clad with scales, on the prothorax tufted, the anterior tibiae on both sides spined, with a cylindrical abdomen. Also in the tropical parts of South America there occur many representatives.

L. radiata *Schs.* (= *atristriata Drc.*) (11 a) has a jet-black head and thorax. Forewing yellowish-white, dusted with reddish-brown and strewn with blackish, with long black stripes in and below the cell as far as the margin from below the apex to close above the anal angle with white-striped veins therein. Hindwing yellowish-white with a brownish costal margin and distal margin. From Brazil. *radiata.*

L. achromatica *Hmps.* (11 b) has whitish forewings scantily strewn with red-brown, with effaced dentate transverse lines, the posterior line being pointedly extended on the veins; the ring-macula is a black dot, the reniform macula a small spot, between both two black longitudinal streaks; the veins in the marginal area striped darker; undulate line indistinctly dentate, before it a dark costal spot, behind it in the discal area dark stripes. Hindwing diaphanous white. Brazil. *achromatica.*

L. cofrensis *Schs.* (11 a) is the only American *Agrotina* with a decidedly green colour and therefore unmistakable; the anterior transverse line is double, the posterior line single; maculae rather large, in white rings and encircled with black in the black cell; discal shade distinct. Hindwing brownish. Mexico (Cofre de Perote). *cofrensis.*

L. rodea *Schs.* (11 b) is easily discernible by the jet-black long basal ray with its continuation above the median, above it a small discal luna; ground-colour whitish-grey, scantily strewn with black; behind the cell a dark patch towards the apex, a more indistinct one at the end of the submedian fold. Hindwing diaphanous white. Mexico to Colombia. *rodea.*

- bivittata*. **L. bivittata** Dogn. is somewhat like *rodea* (11 b), ash-grey, in the costal part light yellowish, scantily strewn with black, with the same 2 black longitudinal rays and discal spot which may be connected with the second black ray; all the other markings are absent. Hindwing likewise white. Expanse of wings: 34 mm. Argentina (Mendoza).
- radiola*. **L. radiola** Hmps. (= *radiatus* Sm.) (11 b) has greyish-brown forewings strewn with black, the veins striped grey and black, and with a black basal ray; the maculae are very small, pupilled whitish, surrounded with black; undulate line marked by small black spots. Hindwing white, at the margin brownish. California, New Mexico.
- mendosica*. **L. mendosica** Hmps. (11 b). Brownish-grey, with a short black basal ray, which is finely continued on the submedian fold; the grey maculae are situate in the blackened cell; behind and below it some brownish dusting, the veins striped brownish, with minute brown subapical spots. Hindwing greyish-brown with white fringes. Argentina (Aconcagua).
- strigigrapha*. **L. strigigrapha** Hmps. is on the forewing brownish-grey, strewn with brown, with darker, light-edged veins and a black basal ray extending to the margin; another black stripe is in the lower half of the cell; the ring-macula is very small, in a grey ring and pupilled black, the reniform macula is a small black spot hardly marked grey; there are postmedian, blackish-brown internerval stripes, on the margin black dots; no transverse lines whatever. Hindwing white, the costal margin and distal margin dusted with brown, in the ♀ darker. Expanse of wings: 36 mm. Patagonian Andes.
- ornea*. **L. ornea** Drc. (= *altes* Drc.) (11 b). Ochreous yellow, scantily strewn with black, with 3 or 4 small black costal-marginal spots and a larger indistinctly defined one on the inner-marginal vein; the ring-macula is only traceable, the reniform macula black, comma-shaped; the posterior transverse line is rudimentary; undulate line lighter, proximally bordered with dark brown or black, the space behind it likewise darkened. Hindwing diaphanous white with brownish margin and veins. The ♀ is more brownish-grey with dark, blackish-brown hindwings with white fringes. — **federalis** Dyar (11 c) are the light ash-grey or brownish-grey male forms. — Mexico and Costa Rica, widely distributed and common.
- figulina*. **L. figulina** sp. n. (13 h) resembles dark ochreous-brown ♂♂ of *ornea*, but its antennae are long-combed as far as the apex. Bright ochreous-brown, the marginal area darkened blackish behind the undulate line, crossed by somewhat grey-dusted veins; in the cell there is a short black longitudinal streak at the base, another above the median before the round ring-macula which is in a hardly visibly darker ring, a third above the lower cell-end; behind the transverse vein which is thickly strewn with whitish-grey at its lower end, there is a small black crescent, downwards crossed by the two whitish-grey strewn branches; instead of the postmedian line a slightly bent row of small black dots on the veins, on the margin a black lunular line interrupted by the veins. Hindwing in the disc diaphanous, dusted with brownish, the darkest at the costal margin and apex. One ♂ from Pacho (Colombia).
- ecliptica*. **L. ecliptica** Hmps. is ochreous red-brown with a slightly bent red-brown subbasal line and single red-brown transverse lines, the posterior line undulate; the upper maculae consist of an effaced small ring and the narrow, dark reniform macula which is surrounded with whitish, the coniform macula being only marked at its apex; traces of a median shade; undulate line effaced, before it at the costal margin a small dark triangular spot. Hindwing white, costal margin, veins, and distal margin dusted with brown. Expanse of wings: 36 mm. Fucgia.
- atrimedia*. **L. atrimedia** Hmps. Forewing bright ferruginous brown, in the costal part strewn with white, with the two single transverse lines, the posterior line very finely undulate; the narrow coniform macula is finely encircled with black, the two upper maculae strewn with white and surrounded with black, the ring-macula above open, the cell before and between them and the space between the reniform macula and the postmedian line dusted with black; undulate line very indistinct with a small darker spot before it at the costal margin. Hindwing white, at the costal margin strewn with brown. Expanse of wings: 42 mm. Fucgia.
- scandens*. **L. scandens** Riley (= *elata* Sm.) (11 b) is light grey, often suffused with reddish or yellow, and somewhat strewn with black; the double transverse lines are only fragmentary, the posterior line is a double row of dots; maculae indistinct, yellowish-reddish and encircled with black, the reniform macula below pupilled darker; the undulate line consists of small whitish lunae bordered by black and orange. Hindwing white, on the veins and margin brownish. In the north and east of the United States, and Colorado. The larva is greenish-brown with darker clouded longitudinal lines; it lives polyphagous on low plants.
- atrifascia*. **L. atrifascia** Hmps. has grey forewings dusted and strewn with brown, the latter particularly on the veins; both the transverse lines indistinctly double, the posterior line finely dentate, behind it on the veins black and white dots; the upper maculae are small, incompletely surrounded with black, between them and behind the reniform macula one black longitudinal streak each; the undulate line is only definable by the darker marginal area. Hindwing of a pure white. Expanse of wings: 32 to 38 mm. Argentina.

L. melanoleuca *Hmps.* Forewing blackish-brown with a reddish tint and leaden lustre; transverse *melanoleuca* lines indistinct, the anterior lines double, the posterior line finely undulate, distally tinted lighter; traces of the median shade, maculae surrounded with black; darker traces of the undulate line. Hindwing white, costal margin and veins brownish. Expanse of wings: 42 mm. Fuegia.

L. lilacina *Zerny* (9 i) has lilac-grey forewings with a somewhat lighter costal-marginal part and equally *lilacina* coloured, coherent maculae in the jet-black cell, below them a black basal ray; transverse lines double, sometimes distinct, sometimes quite indistinct, particularly in the ♀; undulate line mostly indistinct, at the costal margin before it a minute triangular, dark spot. Hindwing white, at the costal and proximal margins faintly yellowish. Bolivia (Cuesta of Cillutincara).

L. astricta *Morr.* (11 c). Large, of a deep purple blackish brown, in the discal area somewhat greyer, *astrica*. in the cell and its surroundings dusted reddish; transverse lines and median shade indistinct, the posterior line dentate, distally tinted with a lighter grey; maculae large, in a blackish ground, undulate line bordered by black sagittae. Hindwing dark brown with whitish fringes. Canada and Northern States. — **subjugata** *Dyar* *subjugata*. s another form with connected transverse lines.

L. nigra *Sm.* (11 c) is likewise a very large brownish-black species with black markings which are *nigra*. more or less bordered with whitish or ochreous yellowish scales; transverse lines double, filled up with a lighter tint, with a faded median shade; the yellowish or whitish undulate line is proximally bordered by a row of small black lunae. Hindwing dirty white with a darker central dot and postmedian line. From Utah and Colorado.

L. occulta *L.* (Vol. III, t. 11 g). This well-known, large species having been dealt with in the pale- *occulta*. arctic part (Vol. III, p. 53) also occurs in America in Greenland, Canada, and the United States as far as Colorado. The brown larva with a flesh-coloured lateral stripe lives on low plants.

L. ochronota *Hmps.* (11 c) is also rather large and resembles somewhat *margaritosa* from which it *ochronota*. differs particularly by the very dark costal part, the forewing being otherwise ochreous brown, strewn with a dark brown; transverse lines double, undulate, filled up with ochreous-yellowish, the posterior line single dentate; the large maculae are black, in yellowish rings; undulate line yellowish, the marginal area darkened. Hindwing diaphanous white with brown veins. Mesothorax ochreous- yellowish. Uruguay.

L. semifusca *Btlr.* (11 c) on the whole resembles *ochronota*, it is smaller, of a lighter brownish grey, *semifusca*. the darkened costal part is much narrower, the transverse lines are more indistinct; mesothorax not tufted yellowish as in *ochronota*, but blackish-brown. The ♀ is much darker with a somewhat lighter marginal area. Chile.

L. margaritosa *Haw.* (= *inermis* *Harr.*) (11 d) is a well-known, almost cosmopolitan species having *margaritosa*. been dealt with at large in the palearctic part (Vol. III, p. 53). The more uni-coloured greyish-brown form **saucia** *Hbn.* (Vol. III, t. 11 h) occurs particularly in the South American ranges. In America this insect flies *saucia*. from Canada to Chile and Argentina. The brownish larva with oblique brownish subdorsal shades lives very polyphagous on low plants.

L. serano *Sm.* (20 f). Habitus and colour agreeing with more contrasting *margaritosa*, whereas the *serano*. markings recall the type of *c-nigrum* by the dark-filled cell, whereas on the whole the median area is somewhat darker against the lighter subbasal and postmedian areas. Described from Arizona (Chiricahua Mountains).

L. margaritella *Dogn.* has brownish-grey forewings with faintly yellowish submedian and marginal *margaritella*. areas, with double, dentate transverse lines filled up with a somewhat lighter colour, the posterior line dentate, behind the teeth whitish dots on the veins; ring-macula large, dusted with whitish, laterally bordered with black, the reniform macula downwards crossing the cell, likewise strewn with whitish; the indistinct light undulate line is likewise dentate. Hindwing white, on the veins and margin brownish. Expanse of wings: 34 to 35 mm. Costa Rica (Volcano Irazu).

L. grandipennis *Grt.* (11 d). Forewing grey, dusted with a purple reddish brown, with somewhat *grandipennis*. blackish veins, a black basal ray and an indistinct, dentate, anterior transverse line, the others being quite extinct; maculae small and rather inconspicuous, with a dark streak between and behind them. Hindwing brownish-grey with darker veins. New Mexico.

L. rudens *Harv.* (11 c, d). The ♂ has a lighter or darker orange-yellowish head and base of collar, in *rudens*. the ♀ whitish. Forewing light grey, strewn with brownish with a strong black basal ray; the anterior transverse lines are only traceable, the posterior line as a row of dots; maculae small, before and between them black stripes; undulate line distally bordered with brown. Hindwing diaphanous white with brown veins, costal and distal margins. Texas to Mexico.

L. pellucidalis *Grt.* (11 d) is very similar, but without the black basal ray and the black stripes in the *pellucidalis*. cell; forewing light grey, more intensely strewn with red-brown, particularly in the costal part; transverse lines more distinct. In the ♀ the orange head and collar of the ♂ is like in *rudens* brownish-grey or whitish. From Texas to Mexico.

- adorea*. **L. adorea** Schs. (11 d). Anterior body and forewing violettish-whitish, strewn with black, with brown veins bordered with white, and a black basal ray; the ring-macula is a small, elliptical, black spot; in the lower cell-end there is a brown patch, dusted with brown behind the upper cell-end and near the anal angle. Hindwing diaphanous white. Brazil (São Paulo).
- microstigma*. **L. microstigma** Schs. (11 d). Forewing grey with a violet tint and strewn with black, with a yellowish white costal part and black basal stripe and a similar one above the median before and between the small white ring-macula and the blackish-pupilled reniform macula; the median is striped yellowish-white; a postmedian transverse row of black dots on the veins; the undulate line consists of small, indistinct sagittae. Hindwing diaphanous white. Brazil.
- interrupta*. **L. interrupta** Maass. is grey with a black basal stripe, extinct transverse stripes, the cell filled up with black before and between the small, round, black-pupilled maculae; undulate line composed of a row of black dots on its proximal side and a somewhat larger spot at the costal margin. Hindwing white, at the margin darkened. Ecuador.
- orthogramma*. **L. orthogramma** Hmps. (11 e) is very easily recognizable by the two slightly bent, dark transverse lines being towards the base bordered with light; ground-colour whitish, densely covered with olive-brown transverse striae, particularly in the costal part; the maculae are whitish rings surrounded with red-brown, the reniform macula is below pupilled black. Hindwing diaphanous white, at the costal margin ochreous-yellowish. Brazil.
- striolata*. **L. striolata** sp. n. (13 d). Forewing greyish-white with numerous long transverse striae, which are scantier and more brownish in the centre of the wing, more densely arranged and of a more brownish grey at the costal margin and in the distal-marginal area, whilst in the two central quarters of the proximal margin they flow together into a broad grey surface and in the marginal area they leave free a lighter undulate line; the lightest is the proximal half of the basal area; the anterior and posterior transverse lines are remarkably distant from each other and marked by single brownish arcuate lines, the posterior line besides marked by blackish dots on the veins on the feet of the bows; of the maculae only the reniform macula is marked by lateral light bordering and black filling of its lower half, behind it there are traces of ferruginous brown dusting; the flight fringes are parted by two fine brown lines. Collar deep black. Hindwing of a pure white. 1 ♀ from the Cuesta de Cillutincara (Bolivia) at an altitude of 3000 m, captured by FASSL.
- fuscicosta*. **L. fuscicosta** sp. n. (13 d) is on its light pinkish-grey ground coarsely dusted with black and in some places, particularly in the costal half and near the maculae and transverse lines feebly dusted with chestnut-red; costal margin from the base to the undulate line broad dark brownish-black; transverse lines double, blackish, behind the posterior line there are besides blackish dots on the veins; maculae rather inconspicuous, of the ground-colour, the upper third penetrating into the dark costal area, the reniform macula below filled up with blackish. Undulate line dark, dentate, proximally faded, distally distinctly defined against the light silvery grey marginal area; on the margin black dots between the veins; fringes light, near the base parted by a dark line being interrupted on the light veins. Hindwing snow-white, diaphanous. Abdomen with a ferruginous-yellowish anal tuft. 1 ♂ from the Cuesta de Cillutincara (Bolivia), 3000 m, taken by FASSL.
- molitrix*. **L. molitrix** sp. n. (13 d) is on the forewing very light pinkish-grey, in the disc and proximal part santily and coarsely strewn with chestnut-red, a dark brown costal part like in *fuscicosta*, and in the marginal area with accumulations of purple blackish scales flown together to long transverse striae; transverse lines single, of a deep chestnut-red colour, the anterior line composed of 3 bows, the posterior line dentate; maculae inconspicuous in the dark costal part, surrounded with chestnut-red, the reniform macula in the lower third pupilled blackish, from its lower angle dense transverse striae form a kind of short median shade. Hindwing whitish diaphanous, at the costal margin brownish. Costa Rica (Volcano Irazu).
- tetraonis*. **L. tetraonis** Drc. The description of this species being unknown to me says: anterior body greyish-brown, abdomen lighter brown. Forewing dark brown, basal and costal areas strewn with grey, with a grey submarginal line running from near the apex to the posterior angle; fringes speckled light and dark brown. Hindwing diaphanous white, at the distal margin near the apex with a row of fine black dots. Expanse of wings: 1½ inch. North Peru (Huancabamba).
- ignicans*. **L. ignicans** Gn. (= *prodenoides* Wkr.) (11 e, f) has ochreous-yellowish forewings striated black with a ferruginous brown or chestnut-brown marginal area; transverse lines and maculae quite extinct or marked by dots, only the reniform macula is marked by 3 black dots on a red-brown spot. Hindwing diaphanous white, costal, proximal and distal margins tinted ochreous or brown. Mexico to Brazil.
- infecta*. **L. infecta** O. (= *incivis* Gn., *alabamae* Grt.) (11 f) resembles *ignicans*, but it is smaller, in the marginal area not red-brown, but more brownish-grey; ground-colour more violettish-grey, both maculae present, the reniform macula not on a red-brown ground. Distributed from the United States in the whole of Central and South America to Argentina and Peru. — The light brown larva with whitish longitudinal stripes lives on grasses.
- biformis*. **L. biformis** Schs. (11 e) chiefly differs from the preceding by the marginal area not being darkened at all; forewing white, striated red-brown and strewn with black; transverse lines indistinct, the posterior line

brownish; no ring-macula, the reniform macula marked by two discal dots. Hindwing of a pure white. Brazil (Sao Paulo).

L. messium *Gn.* (= *pessonii Gn.*, *fureifera Wkr.*, *lucilla Btlr.*, *digramma Mab.*) (11 f). Grey, more *messium*. or less dusted and striated with brown, in the costal part more densely dusted with red-brown; transverse lines double, the posterior line finely dentate; the coniform macula is mostly distinct, the upper maculae are small, surrounded with black and pupilled black; behind the undulate line there is more dense brown dusting. Hindwing diaphanous white, on the veins and margin brownish. Chile, Patagonia, Fuegia.

L. calvescens *sp. n.* (13 f) is allied to the preceding, but at once separable by purely white transparent *calvescens*. hindwings and by the ring-macula not being round but very long extended, forming a transverse oval with a conical continuation towards the reniform macula; besides the transverse lines are only marked by double dots on the veins, the undulate line being absent altogether; the extreme costal margin is reddish-brown with the beginnings of the transverse lines and a larger, subapical, blackish triangular spot. Hindwing diaphanous white with fine black dots between the veins. 1 couple from the Quindiu Pass (Colombia), by FASSL.

L. melanobasis *Hmps.* (11 g) is very much darker than *calvescens*, of a brownish black colour, striated *melanobasis*. darker, before and behind the transverse lines black dusting in the shape of transverse bands, and there is also a median shade; ring-macula round. Hindwing white with a brown-dusted costal and distal margin. Uruguay.

L. ferruginescens *Blch.* (11 g) is also very much like *messium*, but yellowish-white, strewn with *ferruginescens*. brown, recognizable by black costal spots before the anterior (double) and behind the posterior (single) transverse line. Hindwing diaphanous white, in the ♀ towards the margin brownish. From Chile. — **brunnea** *form. brunnea. nov.* (= ab. 1. *Hmps.*) has much darker brown forewings without the black costal spots, the hindwings dusted with a darker brown.

L. minna *Btlr.* (= *mollis Mab.*) (11 g) is a monotonously brown insect with faded transverse stripes, *minna*. the posterior line marked by dots; the ring-macula is a minute spot, the reniform macula consists of 2 small spots connected by a ferruginous brown colour in a lighter bordering. Hindwing diaphanous white, at the costal margin brownish. From Chile and Patagonia.

L. melanopis *Dogn.* is a very small species, above yellowish-grey, in the basal and marginal areas *melanopis*. very finely striated brown, subterminally condensed into small spots on the upper radial and subanally; a double postmedian row of dots on the veins, the maculae finely surrounded by brown, the ring-macula with a brown central dot. Hindwing diaphanous white. Expanse of wings: 25 mm. Described according to a ♀ from Peru.

L. bipuncta *sp. n.* (12 k) looks like *melanopis*; it is larger, of a lighter ashy-grey, instead of the *bipuncta*. maculae there are only 2 black dots in the cell, and the postmedian row of dots is only single. The diaphanous white hindwing is faintly brownish at the margin and on the veins. According to several specimens from Ecuador (Riobamba).

L. crassipuncta *sp. n.* (13 e) is twice as large, light reddish ash-grey strewn with scanty black scales, *crassipuncta*. the most densely at the costal margin and with a thick black discal dot; before the fringes with a row of black marginal dots. Hindwing diaphanous white, at the margin and on the veins faintly yellowish. 1 ♂ from Mount Tolima (Colombian Central Cordilleras), 4200 m, taken by FASSL.

L. spurcata *sp. n.* (13 e). Forewing light ash-grey, intermixed with scanty brown scales with a some- *spurcata*. what brass-like lustre; transverse lines quite indistinct, at the costal margin beginning with brownish double streaks, the anterior line composed of 3 bows, the posterior line of double dots, between them a brownish, narrow median shade being interrupted on the median in an obtuse angle, the undulate line marked by small brownish triangular spots before it; on the margin blackish streaks between the veins; maculae in the ♀ of the same colour, in the ♂ darker brownish-grey than the ground, in fine light rings, of medium size; fringes greyish-brown with an undulate light line parting them. Hindwing in both sexes of a pure white. Some couples from Mount Tolima (Colombia), taken by FASSL.

L. praestans *Maass.* (13 d) is larger and with somewhat narrower wings than the preceding, the ♂ *praestans*. lighter and of a more yellowish tint with similarly arranged markings, but much more distinct and double transverse lines, the inverted lines dentate, the averted ones composed of black dots on the veins; undulate line somewhat more coherent, the margin behind it darkened by brownish; in the ♀ the transverse lines are much more indistinct; the ring-macula is a lighter circle surrounded by brown, with a punctiform blackish pupil. Hindwing of a pure white with faint dark marginal streaks becoming somewhat more distinct towards the apex. Colombia.

L. albiorbis *Dyar* has dark grey forewings strewn with black and dusted with a brass-like lustre, *albiorbis*. with whitish undulate transverse lines being on both sides bordered with black; ring-macula large, round, white; reniform macula with brass-coloured scales, in the lower end filled up with black; the light narrow undulate line is dentate. Hindwing white with a blackened costal margin and a narrow black marginal line. Expanse of wings: 37 mm. Peru, Vileabamba, at an altitude of 10 000 ft., taken in August.

- richioides*. **L. richioides** Dyar (11 i) is a large, quite pale loam-coloured species, scantily strewn with a greyish brown; near the base a black dot; transverse lines not dentate, the anterior line straight, the posterior line bent, light, on the inverted sides bordered with a darker tint; the upper maculae are large light rings, between them darker dusting; the submarginal line is slightly undulate. Hindwing whitish with darkened veins and discal spot. Mexico (Cuernavaca) in May.
- macrostigma*. **L. macrostigma** Hmps. has dark purple red-brown forewings, in the basal and marginal areas scantily striated black; transverse lines double, undulate, the posterior line formed of double rows of dots on the veins; the maculae are large, surrounded with black, the ring-macula round, above open, with a black dot in the centre, the reniform macula pupilled blackish, the coniform macula marked by a black streak; the undulate line consists of faded small black spots and a larger one at the costal margin. Hindwing white, veins and margin brownish. Expanse of wings: 38 mm. South Eastern Peru.
- butleri*. **L. butleri** Schs. (11 g) somewhat resembles *pellucidalis* (11 d, e), but it has no yellow head. Light grey, in some places dusted with brown and strewn with black, transverse lines double, the posterior line pointedly dentate, the small maculae are pupilled in brown and surrounded with black, the coniform macula also surrounded with black; undulate line reddish-brown, faded, at the costal margin it forms a large triangular spot. Hindwing diaphanous white, at the costal margin dusted with brown like the veins of the marginal area. Mexico to Brazil.
- ignirena*. **L. ignirena** Jones has brownish-grey forewings strewn with a dark brown, with single brown transverse lines beginning at the costal margin with large spots; the maculae are ochreous-yellowish, surrounded with ferruginous brown, the coniform macula is dark red-brown, round; the undulate line is indistinct, at the proximal margin it approaches the postmedian line. Hindwing of a pure white. The ♀ is darker, more suffused with brown. Expanse of wings: 30 mm. From Brazil: Castro (Paraná).
- atriclava*. **L. atriclava** Jones. Grey, dusted with brown and strewn with blackish-brown, with black single transverse lines, at the anterior line is the large, jet-black coniform macula, the posterior line being distally accompanied by a light line; in the centre and before the margin dark transverse shades, the former darkening the space between the grey maculae which are pupilled and encircled with dark. Hindwing yellowish-white, strewn with brownish, the most intensely at the apex. Expanse of wings: 34 mm. Castro (Paraná).
- yaxcaba*. **L. yaxcaba** Schs. (11 g). Forewing blackish-brown, densely strewn with black, with single, dentate, black transverse lines, the posterior line somewhat faded; maculae not visible, only instead of the lower end of the reniform macula a bent black line; no undulate line. Hindwing diaphanous white with brown veins. Mexico (Orizaba).
- simplicia*. **L. simplicia** Morr. (= *simplaria* Morr.) (11 h). Greyish-white, strewn with black, with entirely faded transverse lines; the coniform macula is marked by parallel, short longitudinal streaks, the ring-macula by a short streak on the median, sometimes connected with the reniform macula which is composed of a whitish crescent with one black dot on each side. Hindwing diaphanous white, in the ♀ at the margin brownish. Texas.
- aspera*. **L. aspersa** Btlr. (11 h). Light brown, strewn with a darker tint, without any transverse lines, the upper maculae surrounded with a faded darker tint; undulate line marked by a row of small yellowish and black sagittae, at the costal margin with a grey diffuse spot. Hindwing of a pure white. Chile.
- diana*. **L. diana** Btlr. (11 h) has red-brown forewings strewn with black, the base, costal area and veins dusted with grey; transverse lines indistinctly darker red-brown; instead of the ring-macula a small, blackish spot in an ochreous-yellow ring, the reniform macula is a yellowish-white crescentiform spot. Hindwing diaphanous white with dark marginal dots towards the costal margin. Chile.
- castaneata*. **L. castaneata** Hmps. Forewing purple grey, dusted with chestnut-red, the most intensely in the marginal area, and scantily strewn with black, the two transverse lines grey, on both sides bordered with chestnut-red, the posterior line dentate; in the centre of the cell there is a small round spot encircled with grey, at the end a minute luna. Hindwing of a pure white, with a black central dot and marginal streaks. Expanse of wings: 34 mm. Peru (Acopampa).
- carnea*. **L. carnea** Hmps. has flesh-coloured forewings dusted with grey and scantily strewn with black; the anterior transverse line is spotted red-brown, faded, the posterior line dentate, dark; in the centre of the cell is a black dot, at the end a darker discal streak. Hindwing of a pure white with a blackish central dot and marginal streaks, and at the apex with reddish fringes. Expanse of wings: 32 mm. Peru, Uruhuasi.
- funbris*. **L. funbris** Schs. (11 h) is blackish-brown, strewn with whitish, with an ochreous yellowish basal patch on the proximal margin, a black discal crescent and a postmedian faded arcuate row of black dots on the veins. Hindwing yellowish-white with brownish veins and margin. Brazil.
- tenuescens*. **L. tenuescens** Sm. (11 f) has whitish forewings suffused with reddish-brown in the marginal area, without markings except the blackish, blurred reniform macula. Hindwing grey or brownish-grey, towards the base lighter. Nebraska.
- conchidia*. **L. conchidia** Btlr. (11 h). Grey, dusted with brown, with white-striped veins and double transverse lines, the posterior line dentate; all the three maculae are surrounded with black, the two upper ones black-

pupilled, the reniform macula distally brownish-red; instead of the undulate line there are small sagittae. Hindwing diaphanous white, at the margin brownish, in the ♀ darker and broader. From Chile.

L. differens *Wkr.* (11 h) is monotonously dull brown, suffused with a purple reddish tint, with traces *differens*. of darker double anterior transverse lines, the posterior line being absent; the 3 maculae are surrounded with a faded reddish brown; the undulate line is marked by hardly noticeable dark dots. Hindwing white, on the veins, costal and distal margins brownish. Venezuela.

L. digna *Morr.* (= *nigrovittata* *Grt.*) (11 g) has yellowish-white forewings striated in grey and strewn *digna*. with a dark brown especially towards the margin, with entirely extinct markings except the reniform macula being occasionally marked by 2 black dots. Hindwing diaphanous white, in the ♀ the costal and distal margins are tinted ochreous-yellowish. From Texas.

L. tepperi *Sm.* (= *atricincta* *Sm.*) (11 g). Forewing white, dusted with a greyish brown and strewn *tepperi*. with black; transverse lines black, the posterior line dentate, and there is also a median shade proceeding from a black costal spot like the anterior transverse line; no ring-macula, the reniform macula is a small black spot with a black streak below it; undulate line grey, proximally with small black spots, and the marginal area behind it is dusted darker. Hindwing diaphanous white, at the costal and proximal margins brownish. Canada, Dakota.

L. bairdi *Sm.* is much larger than *tepperi* (11 g), light grey, lustrous, scantily strewn with blackish, *bairdi*. particularly at the proximal and distal margins; the transverse lines run the same as in *tepperi*, but they are quite extinct except the black costal-marginal spot from which they proceed; the ring-macula is a small round spot, the reniform macula is a narrow, small luna laterally scaled black. Hindwing whitish, tinted yellowish. Expanse of wings: 43 mm. Established on 1 ♀ from Canada (Alberta).

L. exuberans *Sm.* (11 i) is much lighter, reddish or ash-grey, scantily strewn in a darker tint, the *exuberans*. transverse lines mostly only marked in their beginnings by dark costal spots; maculae, except the small black reniform macula, extinct; an indistinct median shade is present; the undulate line is lighter than the ground-colour, proximally at the costal margin shaded darker, the marginal area behind it darker. Hindwing iridescent white, towards the margin brownish. Colorado.

L. costigera *Wkr.* (11 i) is grey, dusted with red-brown and strewn with a dark brown, the extreme *costigera*. costal margin being white, the transverse lines somewhat more distinct than in *exuberans*, likewise proceeding from black costal spots; only the small, grey reniform macula is present, surrounded with blackish. Hindwing white, dusted with ochreous-brown. Chile.

L. lubricans *Gn.* (= *spretta* *Sm.*, *associans* *Wkr.*) (11 h) is a very variable insect both in size and *lubricans*. colouring. The markings only consist of more or less extinct single transverse lines starting with thick black costal spots, and of a small grey reniform macula surrounded with black, which may be reduced to streaks or dots; the whitish undulate line is likewise composed of small whitish diffuse spots, before which there is mostly red-brownish shading. The nomenclatural type has dark chocolate thorax and forewings and smoked hindwings also in the ♂ and seems to be confined to the south-western part of the United States. — The eastern and Canadian form: **illapsa** *Wkr.* (= *lubricans* *Hmps.*) has reddish-brown forewings more or less dusted with *illapsa*. grey and strewn with black, particularly the costal part is grey, and entirely white diaphanous hindwings. — **beata** *Grt.* (11 i) has been described from New Mexico and is distinguished by blackish-brownish not ferruginous *beata*. brown proximal shading of the undulate line.

L. espoetia *Dyar* (11 i) almost looks like a strong dark *lubricans*, but it has much stronger, distinctly *espoetia*. dentate-serrate antennae; the colouring is more reddish lilac-grey, in the basal and costal parts bluish-grey, more coarsely strewn with black, the transverse line being mostly always present, rather strong; no ring-macula, the reniform macula forms an L-shaped black mark; the undulate line is proximally broadly shaded with blackish; fringes intermixed with chestnut-reddish and sharply contrasting with the more bluish-grey marginal area. Hindwing diaphanous white with brownish veins and costal margin. Base of collar like in *lubricans* deep blackish-brown. Mexico.

L. molibdoida *Stgr.* (11 k) is lead-coloured black, more or less suffused with ferruginous brown, with *molibdoida*. single, indistinct, dentate transverse stripes; maculae small, surrounded with an extinct ferruginous brown, the undulate line being absent. Hindwing brownish-grey, towards the base and proximal margin whitish, with yellowish-white fringes. Patagonia.

L. analis *Grt.* (= *mantalini* *Sm.*) (12 a). Forewing dark brown, suffused with black, particularly *analis*. in the proximal half and on the veins; the transverse lines are quite indistinct, the posterior line very sharply dentate; the long coniform macula is surrounded with light, the upper maculae are very small, the ring-macula long and pointed elliptical, surrounded with light; the dentate undulate line and a dentate median line are marked by traces. Hindwing brownish-grey. United States (Nevada).

21. Genus: **Adita** *Grt.*

In the anatomical marks it entirely resembles the genus *Onychagrotis* from which it differs by the anterior tibiae being on the inside armed with a long bent claw at the end, whilst outside there is none at all. Only one species is known.

chionanthi. **A. chionanthi** *Abb. & Sm.* (11 k). The grey forewing is dusted with a brownish black; the black transverse lines are single, not dentate, the posterior line describes a deep bow proximad below the reniform macula; the brownish-pupilled maculae are in whitish rings and surrounded with black; the irregularly dentate undulate line is distally bordered with whitish and is above the anal angle crossed by a long black ray; the veins in the marginal area are striped blackish. Hindwing white, on the veins and margin brownish. Canada, United States. Larva light brown, on the dorsum yellowish with black dorsal spots; it lives on *Chionanthus*.

22. Genus: **Aplectoides** *Hbn.*

This genus contains a series of relatively slender species with large and broad wings; the characteristic mark of distinction from the allied genera are the anterior tibiae being on the inside armed with thin, short spines, distally bare, or without any spines at all. *Comp. Vol. III, p. 59.*

speciosa. **A. speciosa** *Hbn.* (= *perquiritata* *Morr.*, *baileyana* *Grt.*). This greyish-white larger species strewn with blackish-brown has been dealt with at large in the palearctic part (*Vol. III, p. 59*). It occurs in Canada and the Northern United States (White Mts., Adirondaeks; Vermont). — The smaller and more indistinctly marked, darker form **arctica** *Zett* (*Vol. III, t. 13 k*) likewise flies in the northern ranges. — Besides there occurs *mixta*. in Labrador a small, light, distinctly marked form: **mixta** *Wkr.* — The larva is red with white, fine, black-edged dorsal and subdorsal lines and a yellow lateral stripe, and lives on species of *Vaccinium* and on grasses.

imperita. **A. imperita** *Hbn.* (= *comparata* *Mschlr.*, *saxigena* *Morr.*, *discitincta* *Wkr.*) (11 k) is much smaller, darker bluish-grey, dusted with brownish, with a black basal ray, with black dentate transverse stripes bordered with grey, and the maculae being pupilled brownish, in the blackened cell; the undulate line is black, the hindwing brownish-grey. From Canada (Labrador), besides in the Amur District.

occidens. **A. occidens** *Hmps.* is violettish-grey, strewn with brown with black transverse lines, the anterior line proximally bordered with grey, the posterior line feebly dentate; the grey maculae are surrounded with black and are situate in a red-brown shade extending also below the cell; from the cell-end and undulate red-brown line runs to the proximal margin; the whitish, indistinct undulate line is crossed by black veins and has a red-brown spot before it at the costal margin. Hindwing reddish-brownish with lighter fringes. Expanse of wings: 34 mm. British Columbia.

livalis. **A. livalis** *Sm.* looks like a small *speciosa* (*Vol. III, t. 13 i*), it is distinctly marked black and white, without any brown speckles, with smaller maculae which are connected with black in the lower half of the cell. On its white ground it is tinted olive-grey, marked like *speciosa*, though more contrastingly, the double transverse stripes filled up with white. Expanse of wings: 40 mm. New Foundland.

pressus. **A. pressus** *Grt.* (11 k) has light brown forewings mixed with black and white, with faded ochreous stripes below the costal base, on the submedian and discal folds; the black, dentate, double transverse lines are filled up with whitish, the posterior line is only single, distally bordered with white; the large coniform macula is marked black, the upper maculae are large, whitish, partly strewn with ochreous, the lower half of the cell before and between them filled up with black; before the light undulate line small black sagittae. Hindwing light brownish-grey, at the margin darker. Canada, North Eastern and Central States.

fates. **A. fales** *Sm.* resembles a dark *pressus* (11 k) with extinct markings. Forewing smoky-grey with a slight olive tint, behind the reniform macula somewhat lighter; the transverse lines are not filled up with white, but with grey; the undulate line is proximally shaded with a distinct blackish colour; the large ring-macula is light grey, V-shaped. Hindwing smoky-grey with white fringes. Expanse of wings: 35 mm. Canada (Alberta).

beddeci. **A. beddeci** *Hmps.* is as large as the preceding, on the forewing white, in some places tinted ochreous, in the discal area more intensely strewn with black; transverse lines single, black, dentate; the coniform macula is surrounded with black and connected with the postmedian line by a black stripe, the small upper maculae are distinctly surrounded with black, in the centre strangulated. Undulate line marked by black sagittae. Hindwing white, dusted with brownish, with a dark discal spot and 2 transverse lines behind it. Expanse of wings: 36 mm. New Foundland.

arufa. **A. arufa** *Sm.* in its exterior resembles *imperita* (11 k), but all the brown or reddish tints are absent, and the species is much more feebly marked. The ground-colour is a dull blackish grey, the markings but slightly darker, marked by some black scales; at the undulate line the black sagittae are absent, but the black marginal lunae are larger and more distinct. Hindwing smoky grey, in the basal area whitish, with a broken marginal line, a dark discal luna and transverse line behind it. Expanse of wings: 37 mm. Wyoming (Yellowstone Park) in August.

A. condita Gn. (= *trabalis* Grt.) (12 a) is a larger, reddish-brown species mixed with white, with a *condita*. black basal ray; transverse lines single, black, dentate, distally bordered with white; the maculae are large, whitish, surrounded with black, connected by 2 black streaks, the ring-macula oblong elliptical; between the postmedian line and the grey undulate line there is red-brown dusting. Hindwing yellowish-white, towards the margin brownish. Canada, Northern, Central and Eastern States.

A. discolor Sm. Forewing greyish-white, irregularly strewn with black, and apparently very variable; *discolor*. transverse lines not distinct, double, filled up with a somewhat lighter tint, the white undulate line is proximally accompanied by a black shade; the large maculae are surrounded by black and situate in a darker ground, both connected by a black streak. Hindwing whitish, hued with a brownish grey, with a darker discal luna and submarginal band; fringes white. Expanse of wings: 39 to 41 mm. British Columbia.

A. abbea Sm. at first sight resembles a small *Eurois prasina* F. (Vol. III, t. 14 a); forewing on a *abbea*. whitish ground more or less dusted with moss-like green, with distinct markings; the double dentate transverse lines are filled up with whitish; the large maculae encircled with black are connected by a black streak; the undulate subterminal line is proximally bordered by a darker shade which is condensed into small sagittae in the interspaces. Hindwing yellowish dirty white with a darker discal luna with two transverse lines behind it. Expanse of wings: 40 to 43 mm. British Columbia.

A. atrata Morr. for which a separate genus: *Pteroscia* was established, which, however, probably coin- *atrata*. cides with *Aplectoides*, has dull smoky-brown forewings with more or less extinct maculae and transverse lines, the posterior line being single, blackish, uniformly bent, on the veins extended into sharp teeth. Hindwing monotonously dark blackish-brown with somewhat lighter fringes. This rare species is described from Mt. Washington. — **yukona** McD. is perhaps a separate species, smaller, with a similar, but somewhat more distinct *yukona*. marking, on the whole of a more graceful structure, similar to a large *A. laetabilis*. From Yukon.

A. homogena McD. has a similar marking as *Anomogyna laetabilis*, but the size and structure like *homogena*. *atrata*. We can unfortunately not say anything for the present about this species being unknown to us.

23. Genus: **Apharetra** Grt.

It differs from the preceding genera by the long cilia covering the eyes like in the *Cucullianae*; all the rest agrees rather much with *Aplectoides*, but the anterior tibiae are not spined.

A. dentata Grt. (12 a). Grey covered and strewn with brown, with finely dentate, single transverse *dentata*. lines and grey maculae surrounded with black; the dentate undulate line is proximally shaded with brown. Hindwing yellowish, at the margin brownish with whitish fringes. Canada, Eastern and Northern States.

A. pyralis Sm. (12 a). Forewing black, strewn with grey, the black, single, dentate transverse lines *pyralis*. are bordered with grey; maculae finely surrounded with black; undulate line scarcely visible; behind it in the centre of the marginal area a blackish spot; fringes speckled grey and blackish-brown. Hindwing brownish-grey with white fringes. Canada (Alberta).

24. Genus: **Ufeus** Grt.

Distinguished by short, porrect palpi covered with long and rough hair; the eyes are ciliated like in the preceding genus; anterior body clad with rough hair, abdomen flattened with a large anal tuft, anterior tibiae not spined. Comp. Vol. III, p. 66.

U. sagittarius Grt. (12 a). Red-brown, intermixed with lighter scales, without any transverse lines, *sagittarius*. instead of the maculae with two small yellowish, confluent diffuse spots. Hindwing yellowish brownish-grey. California.

U. electra Sm. has dull chocolate forewings densely covered with long black hair, with a long black *electra*. basal ray, another black ray extending through the cell to the margin; only the posterior transverse line is indistinctly present, the maculae are absent. Hindwing yellowish greyish-brown, with a distinct discal luna and transverse line behind it. Expanse of wings: 39 to 41 mm. Oregon.

U. hulsti Sm. (= *coloradica* Strd.) is on the forewing light red-brown with somewhat darker veins, *hulsti*. and haired blackish; the anterior transverse line is blackish, single, and composed of three flat bows, the posterior transverse line is feebly dentate, distally edged with a somewhat lighter tint. Hindwing reddish-grey with a silky lustre. Expanse of wings: 34 to 35 mm. Wyoming, Utah.

- faunus.* **U. faunus** *Streck.* This species as well as the following has hitherto been dealt with as *Ufeus* and described from New Mexico. To HAMPSON, however, it has remained unknown, and in most of the even more complete American collections it seems to be absent. It is undoubtedly very closely allied to the following.
- plicatus.* **U. plicatus** *Grt.* (= *barometricus* *Goos.*) (12 a) is dark red-brown, dusted and strewn with a greyish brown, in and below the cell with more or less distinct black longitudinal streaks and a posterior transverse line which is broken in an acute angle and distally edged lighter. Hindwing light brown. From Canada to Mexico.
- satyricus.* **U. satyricus** *Grt.* (12 b). Dark brown, with blackish hair and an indistinct bent anterior and dentate posterior transverse line, the teeth extended into short streaks on the veins, with a black basal ray and in the cell-end; before the margin there are black internerval streaks, the longest being that above the middle radial vein. The light hindwing is dark-haired with a darker discal luna. Canada, United States (New York, Pennsylvania, Illinois).
- unicolor.* **U. unicolor** *Grt.* (12 b) is an almost uni-coloured blackish-brown insect with traces of a posterior transverse line. Hindwing light brown with a reddish tint. Illinois. — **coloradica** *Strd.* (= ab. 1 *Hmps.*) has much darker brown hindwings strewn with grey; from Colorado.
- lura.* **U. lura** *Dyar* has dark violettish-brown forewings strewn with blackish, with a lighter postmedian area; veins and transverse lines black, the latter on the averted sides edged lighter, the posterior line dentate, rectangularly broken close beneath the costal margin and for some distance parallel with it. Hindwing smoky brown. Expanse of wings: 38 mm. Mexico (City) in June.

25. Genus: **Anytus** *Grt.*

Proboscis developed, palpi erect, in front hairy; frons smooth, eyes not ciliated; anterior body clad with hair and scales, thorax tufted, behind with a keeled tuft; tibiae hairy, anterior tibiae not spined; abdomen not flattened with tufts.

- evelina.* **A. evelina** *French* (12 b). Forewing dark purple grey, postmedianly more or less hued with a claret-coloured tint, with black transverse lines, the posterior line dentate and submedianly edged whitish, and with large maculae surrounded with black; the whitish dentate undulate line shows proximad small brown sagittae, distally black longitudinal streaks to the distal margin. Hindwing yellowish-white, at the margin brownish. United States (Colorado, California). — The light brown larva is watered with black, with oblique dark lateral shades; it lives on Lupini, species of Ribes etc. — **hanhami** *Sm.* is a smaller, darker, more intensely dusted form with a black streak connecting the transverse lines. From British Columbia.
- discors.* **A. discors** *Grt.* (= *vinela* *Sm.*) is very similarly marked, lighter, more brownish in the colouring, with very distinct black internerval streaks in the marginal area; which form sagittae before the punctiform undulate line; the transverse lines are likewise connected by a fine submedian longitudinal streak; the upper maculae are incompletely surrounded with blackish. Western United States (Kansas).
- cupola.* **A. cupola** *Hmps.* The whitish forewing is densely strewn with dark brown and in some places dusted with red-brown, particularly the proximal half of the discal area; a black basal ray is above bordered with white; the black double transverse lines are filled up with whitish, the large light, white-ringed maculae are incompletely surrounded with black, the reniform macula is on the submedian produced inwards; an undulate blackish line extends from the lower cell-angle to the proximal margin; the dentate light undulate line is proximally accompanied by black sagittae, distally by black internerval streaks. Hindwing of a pure white with a black marginal line, in the darker ♀ dusted with brown. Expanse of wings: 42 mm. United States (Utah).
- connecta.* **A. connecta** *Sm.* is very much like *discors*, but easily discernible from it by the large light ring-macula and the intense white dusting on the distal side of the postmedian line above the proximal margin. The species was described as a *Polia*, but it belongs hereto owing to the middle and posterior tibiae being spined though but feebly. Colorado, Utah, Arizona. It is possible that *cupola* may belong to it as a synonym.
- yosemitae.* **A. yosemitae** *Grt.* as well as the following recall the palearctic species of *Aporophylla*. Ground-colour dark ash-grey, of a very uniform tint, with black, distinct, single transverse lines, submedianly connected by the long coniform macula; behind the whitish-spotted undulate line there are black internerval streaks; ring-macula oblong, oblique, reniform macula large. Hindwing whitish grey. Canada.
- enthea.* **A. enthea** *Grt.* is allied to the preceding, but it has a coal-black ground-colour with velvety black markings entirely arranged as in *yosemitae*. Maine.
- instruta.* **A. instruta** *Sm.* (= *derelicta* *Hmps.*) has bluish-grey forewings dusted with brown, with a black basal ray and black single transverse lines, the posterior line being dentate and distally near the proximal margin

bordered with white; from the end of the coniform macula being surrounded with black a black stripe extends to the posterior transverse line, the upper maculae are in whitish rings and surrounded with black; veins in the marginal area striped black with black sagittae between them. Hindwing brownish. From Canada.

A. exhilarata Sm. is very much like the following *betsia*, but decidedly whitish-grey with much more *exhilarata*. intense and more distinct markings, the hindwings being all white. The ♀ is more dusty brownish-grey with more faded and not black markings. From Utah.

A. betsia Sm. is discernible from all the allies by the very light ash-grey forewings and purely white *betsia*. hindwings; forewing with a long black basal ray, upwards distinctly defined, downwards faded; transverse lines single, black, the anterior line composed of 3 bows, the posterior line only marked by streaks, behind lighter, a long subanal tooth extends to the anterior transverse line with the coniform macula; the large, somewhat lighter maculae are only in front marked black. Expanse of wings: 37½ mm. Described according to 1 ♂ from Utah.

A. privata Wkr. (= *monstrata* Wkr., *sculpta* Grt.) (12 b) has grey forewings in some parts dusted *privata*. with a dark brown, with the same markings as the preceding species, though more variegated, the transverse lines edged more by whitish. Hindwing dusted with brown, with darker veins. Canada; Eastern and Central States to New York and Colorado. — **plana** Grt. seems more to be based on an aberrative specimen lacking *plana*. the transverse lines, whereby it looks more longitudinally striped.

A. tellowa Sm. is much darker than *privata* (12 b), more dark bluish-grey instead of ash-grey with *tellowa*. much darker hindwings showing a more intense discal spot and postdiscal line; the markings of the forewings are stronger though more faded, the undulate line is absent altogether, the shade accompanying it proximally in *privata* extends across the whole marginal area. New Hampshire, Massachusetts, New Jersey.

A. atristrigata Sm. (12 a). Grey, dusted with a brownish black and easily recognizable by the long *atristrigata*. black submedian stripe extending from the base to the margin and being above and beneath bordered by a faded blackish brown; transverse lines double, filled up with whitish, the posterior line removed uncommonly close to the margin, the markings otherwise not different from those of the preceding. Hindwing almost purely white. Texas.

A. tenuilinea Sm. in the colouring and scheme of markings entirely resembles *privata* (12 b) and it *tenuilinea*. also resembles *tellowa*, but it is at once discernible from them by very fine and delicate markings and the light yellowish-grey basal area. Utah, Massachusetts.

A. profunda Sm. (12 b) differs from the preceding by the very dark colour being intensely strewn *profunda*. with black; the transverse lines are single, bordered with whitish, rather close together and connected submedianly. Hindwing white with a darker subterminal band. Canada, Manitoba. — f. **obscura** Sm. from Calgary *obscura*. is still darker, but more brown, more uniformly coloured without any contrasts, with less distinct transverse lines; the hindwings are darker, too.

A. negrita Hmps. has blackish-brown forewings feebly dusted with grey, with indistinct, undulate *negrita*. transverse lines, a short, deep red-brown coniform macula surrounded with black, the upper maculae in grey rings with brown pupils and surrounded with black, the reniform macula in the middle strangulated, extending as far as below the cell-end; instead of the undulate line there are small grey and black sagittae. Hindwing white with brown veins, the proximal margin and marginal area being broadly suffused with a brownish grey. Expanse of wings: 36 mm. Uruguay.

A. colombiensis Dogn. is a much smaller species, dark grey, strewn with whitish and black, with *colombien-* *sis*. black transverse lines dying away in the variegated ground, the posterior line distally edged with white; macula strewn with white and grey, surrounded with black, the ring-macula above and below open, above both black costal streaks; the rather indistinct whitish undulate line forms 2 bows. Hindwing white, veins, costal margin and distal margin blackish. Expanse of wings: 28 mm. Colombia (Bogotá).

26. Genus: **Anomogyna** Stgr.

In the large and broad forewings it agrees with *Aplectoides* from which it differs by the unspined, very hairy anterior tibiae; besides the palpi are scaled in front, not hairy. The thorax is covered with scaled hair, in the centre there are loose tufts. Comp. Vol. III, p. 59.

A. sincera H.-Schöff. (Vol. III, t. 13 k). This extremely rare species has been dealt with in the *sincera*. palaearctic part (Vol. III, p. 59). The specimens from Labrador in the Coll. STAUDINGER are on an average smaller with somewhat narrower wings, and in the postmedian area and subeostally dusted somewhat darker than European specimens; the hindwings are also much darker brown. Otherwise the beautiful species showing

distinct markings is unmistakable. In America it is found in Labrador as well as in the mountainous districts of the Northern and Central States.

laetabilis. **A. laetabilis** Zett. (Vol. III, t. 13 k) is smaller than the preceding, more variegated and darker grey, with distinctly white-ringed maculae and white-edged postmedian line. The ♀ is much smaller with narrower wings than the ♂. It is found in Labrador; also in the palearctic region (Vol. III, p. 59).

infimatis. **A. infimatis** Grt. (12 e) is much more tinted brown or red-brown than the preceding, particularly with red-brown longitudinal patches in the interspaces; the black basal ray flows together with the coniform macula; transverse lines, especially the posterior line, only marked by dots, the ring-macula by a whitish patch; the small blackish uniform macula is encircled with white and below on both sides prolonged and produced.

dernarius. Hindwing yellowish or greyish-brown. Canada; Washington; California. — **dernarius** Sm. is dusted with grey in the costal and proximal-marginal areas, in the basal and subterminal areas, with an anterior, double, sharply dentate transverse line filled up with whitish; the upper median and lower radial branches are towards the margin accompanied by white diffuse sagittae. From the same habitats.

vernilis. **A. vernilis** Grt. (= *filiis* Sm.) resembles *infimatis* in the scheme of markings, but it is without any red-brown tints, and the ground-colour is a much darker grey with black-striped veins; the longish oblique ring-macula is confluent with the reniform macula; the indistinct posterior transverse line is very strongly dentated; the undulate line is only marked by the browner shading behind it. Hindwing greyish-brown with fringes being white at the ends. United States (Nevada, California, Sierra Nevada).

27. Genus: **Richia** Grt.

Allied to the genus *Epipsilia* from which it differs by the scaled and hairy thorax exhibiting in front a sharply ridge-shaped tuft, and besides by the spined anterior tibiae.

parentalis. **R. parentalis** Grt. (12 e). Forewing light reddish-brown, scantily strewn with a darker colour, in the costal area dusted with a bluish grey, with single black transverse lines, the discal area between them suffused with black and with contrastingly lighter grey maculae therein; undulate line proximally shaded with a brownish grey, at the costal margin with a darker spot. Hindwing reddish greyish-brown with pinkish-reddish fringes.

decipiens. Colorado. — **decipiens** Grt. has a bluish-grey head and thorax and much darker forewings with faded, not black but only darkened transverse lines; from New Mexico.

distichoides. **R. distichoides** Grt. is on the forewing monotonously olive-grey, somewhat strewn with black; the anterior transverse line is distinct only at the costal margin, the posterior line consists of dark dots on the veins; between the indistinct, reddish-dusted maculae the median line being angular at the lower cell-angle extends to the proximal margin; the feeble darker undulate line proceeds from a black triangular spot at the costal margin. Hindwing light brownish-grey with lighter fringes. Expanse of wings: 35 mm. New Mexico.

chortalis. **R. chortalis** Harv. (12 d). Forewing brownish-grey, strewn with black, with a black basal dot; the anterior transverse line is in the upper half black, single, on the veins interrupted, from there brownish and double, the posterior line double; between the lighter ringed maculae extends an indistinct median line; undulate line light, proximally shaded with brownish. Hindwing white with brownish veins and margin, in the ♀ dusted quite brown. Texas and Colorado. — **aratrix** Harv. has no black colour on the anterior transverse lines which are only transverse lines. From New Mexico and Arizona.

carnea. **R. carnea** Drc. (12 d) differs from the other species exhibiting serrate antennae by their simply ciliated antennae. Flesh-coloured, dusted over with grey, in the basal area with a dirty whitish submedian patch; transverse lines black, interrupted, the posterior line dentate, proximally accompanied by a row of dots; undulate line composed of white and dark dots, proximally accompanied by a brownish shade. Described from Chile.

28. Genus: **Trichorthosia** Grt.

Beside *Ala*, *Trichophotia*, and *Mimobarathra* the only *Agrotine* genus with hairy eyes which are besides ciliated. Proboscis feebly developed, palpi short; anterior body loosely haired, without tufts; the anterior tibiae are without spines, only in *spinosa* with spines. But few species have been described:

parallela. **T. parallela** Grt. (= *terminatissima* Dyar). Forewing ochreous-yellowish with an olive tint with double, faintly marked transverse lines; the ring-macula is only a dark dot; the reniform macula is dusted with reddish, below with black dots; undulate line double, the proximal line stronger, the distal line straight from the apex close to the anal angle, the marginal area behind it dusted with white. Hindwing brownish-grey, fringes light. Expanse of wings: 28 mm. New Mexico, Arizona.

T. spinosa *B. & McD.* (12 d). Thorax grey, collar yellowish; forewing purple brown, strewn with *spinosa*. oehreous, with indistinct transverse lines which are double and blackish; only the undulate line is distinctly prominent, extending like in the preceding straight from the apex to the anal angle, light oehreous; both the upper maculae are deep purple brown, surrounded with oehreous, Hindwing dark brownish-grey, with yellowish fringes. Expanse of wings: 30 mm. Described according to 2 ♀♀ from Arizona.

T. aselenograptus *Dyar.* Costal margin loamy yellowish-grey, a similar stripe below the cell as far *aseleno-* as close to the margin behind the cell connected with the costal stripe, below it a black basal ray; a velvety *graptus*. black wedge-shaped spot fills up the cell except the base, a black submedian stripe extends close to the margin; the undulate line is straight, light, distally edged with brown, before it a spot, on the median veins dentate; marginal area slaty grey, fringes and proximal margin purple grey. Hindwing brownish-grey with a darker discal luna. Expanse of wings: 30 mm. Mexico (Hidalgo).

T. clarkana *Dyar.* Forewing oehreous-grey, the veins, particularly the median dark brownish-grey; *clarkana*. instead of the ring-macula a dot, instead of the reniform macula at the lower cell-end a small white spot, partly encircled with black; the undulate line is straight, white and proximally bordered with a brownish grey, the marginal area behind it is very narrow with fine black marginal dots. Hindwing brownish-grey with a dark discal luna. Expanse of wings: 30 mm. Mexico (Hidalgo).

29. Genus: **Mimobarathra** *B. u. McD.*

Allied to the preceding genus and also with hairy eyes; thorax covered with loose, spatulate scales, with a parted tuft on the metathorax and a small tuft on the first abdominal ring; ♂ antennae composed of imbricately arranged joints showing lateral appendices, so that the antenna almost looks combed; middle and posterior tibiae spined, anterior tibiae without spines. Only one species:

M. antonito *Barnes* (12 d). Grey with a greenish-yellow tint, in some places dusted with brown; trans- *antonito*. verse lines irregularly double, filled up with whitish, undulate line white, interrupted, behind it shaded with black, forming a W; maculae large, light, pupilled darker. Hindwing brownish grey. Arizona (Huachuca Mts.).

30. Genus: **Mythimna** *O.*

This genus shows exactly the same anatomical marks as *Epipsilia*, but the anterior tibiae are without spines and instead of them long-haired. Comp. Vol. III, p. 61.

M. olivata *Harv.* (= *blanda* *Grt.*, *taedata* *Grt.*, *deepta* *Grt.*) (12 c). Forewing varying from greyish- *olivata*. brown to chestnut-brown, somewhat strewn with black, with 2 blackish transverse lines on the averted sides bordered with grey or whitish, and darker, light-ringed maculae; the posterior transverse line consists more of dots, and also the light undulate line is proximally bordered by a dark row of dots. Hindwing light reddish-grey or brownish-grey. Canada, United States to California.

M. lobato *Barnes* (12 d). Ground-colour very light reddish-buff, with very feeble, almost straight *lobato*. transverse lines, the posterior line proximally accompanied by small brown dots on the veins, somewhat lighter than the ground; in the same way the equally coloured maculae are surrounded, so that they are hardly prominent, both being above open. Hindwing diaphanous white with faintly yellowish fringes. Arizona (Chiricahua Mts.). It presumably coincides with *Agrotis hahama* (9 g).

M. oxalina *Hbn.* (= *intexta* *Harr.*) (Vol. III, t. 14 e) is a species widely distributed in the pale- *oxalina*. arctic region (comp. Vol. III, p. 62), occurring also in the United States (New York); brown, dusted with grey, with the somewhat darker discal area edged by the straight, light transverse lines, with large maculae surrounded with light being situate therein.

31. Genus: **Matuta** *Grt.*

This genus which is better known as *Eurois* or *Aplecta* differs from the very closely allied *Anomogyna* by the more smoothly scaled and haired thorax, the second, anteriorly haired not scaled palpal joint, whereas the third is short and porrect.

M. youngi *Sm.* (12 c). Forewing changing from reddish grey to blackish brown, strewn with black, *youngi*. with distinct markings; transverse lines double, filled up with a light grey, the maculae large, in yellowish or grey rings; the undulate line is yellowish or grey, irregular, punctiform, proximally shaded dark, the marginal area behind it mostly lighter. Hindwing blackish brown, towards the margin more reddish. From Canada.

- elimata*. **M. elimata** Gn. (12 e) is purple grey, dusted with red-brown, with brownish transverse lines edged with grey, the posterior line being dentate, with large, hardly lighter maculae finely encircled with black, and a black streak as far as the reniform macula. Hindwing brownish-grey. — **badicollis** Grt. is greyer with more intense black markings and the cell-end often filled up with black. — In **janualis** Grt. (= *diluēda* Morr.) the black streak is absent in the cell, the ground-colour is somewhat lighter, more reddish. Canada, United States.
- tenebrifera*. **M. tenebrifera** Wkr. (= *catherina* Grt., *manifestolabes* Morr.) (12 e) has ferruginous forewings strewn with dark, with indistinct darker transverse lines, the posterior line being dentate; the maculae are somewhat strewn with whitish, encircled by a scarcely darker tint; there are only traces of the undulate line. Hindwing light reddish-brown. Canada, United States.
- grisatra*. **M. grisatra** Sm. resembles *elimata* (12 e) in the shape of the wings, but it is much more uniformly grey and has almost black hindwings; the smoky-grey ground of the forewing is dusted with a bluish grey; the basal ray is absent, the transverse lines are fine black, beginning with thick costal-marginal spots; the light maculae are situate in the dark-smoked ground of the cell. Expanse of wings: 39 mm. New Jersey.
- atoma*. **M. atoma** Sm. is the smallest species of the genus. Forewing light red-brown, very much dusted with grey and strewn with black, with scarcely marked or entirely extinct markings, the transverse lines mostly being only marked by costal-marginal streaks; undulate line marked by somewhat darker proximal shading; the ring-macula is large and so is the reniform macula, both being scantily surrounded by black scales; hindwing smoky brownish with pink fringes. Expanse of wings: 29 to 34 mm. From New Jersey.
- indeterminata*. **M. indeterminata** Wkr. (= *washingtoniensis* Grt.) (12 f). Forewing reddish-brown suffused with a darker tint, with a black basal ray and an anterior double and a posterior single dentate transverse line; ring-macula grey, reniform macula of a conspicuous yellowish white in a black ground of the cell; the coniform macula is connected with the postmedian line being dentate like a W; a subterminal row of small black and white sagittae. Hindwing greyish-brown, towards the base lighter. Canada, Washington. — **innotabilis** Grt. from California has the ring-macula more U-shaped, and the coniform macula is not connected with the postmedian line.
- stellaris*. **M. stellaris** Grt. (12 e) is similar though without the black basal ray, the forewing is more purple grey dusted with a claret-like colour; both the upper maculae are yellowish-white, the cell between them is less deep black; an undulate median line is present; the whitish undulate line exhibits black dusting towards the base. Hindwing brownish-grey. Washington, Nevada.
- apposita*. **M. apposita** Grt. (12 e). Forewing dull red-brown, dusted with a dark brownish grey; anterior transverse line double, undulate; the discal area of a lighter red-brown with a faded darker median shade; maculae dusted somewhat reddish, the undulate line indistinctly lighter. Hindwing brownish-grey. Canada to California.
- quarta*. **M. quarta** Grt. (12 e). Reddish greyish-brown with the same markings as in the preceding, the posterior transverse line indistinct, pointedly dentate on the veins; maculae of a yellowish white, the reniform macula scaled orange-red, the cell between them darkened, not black; undulate line whitish, proximally with black dots. Hindwing light brown. California.
- prasina*. **M. prasina** F. (= *herbacea*) Gn. (Vol. III, t. 14 a) is the well-known species with olive-green markings being also widely distributed in the palearctic region (Vol. III, p. 60) and being just as variable in America as in Europe. It is found in Canada and the United States (Massachusetts, New York, Iowa, Colorado). The violettish-brown, darker spotted larva lives polyphagous on low plants.

32. Genus: **Abagrotis** Sm.

This group of but 3 species can only be regarded as a subordinate genus of the following, since it merely differs by the serrate ♂ antennae provided with ciliary tufts and by a somewhat keel-shaped or ridge-shaped protuberance on the collar and prothorax.

- erratica*. **A. erratica** Sm. (12 f) exhibits decidedly reddish-brownish dusting on its ash-grey or more straw-coloured or brick-reddish ground. The marking is rather the same in all these species, here generally little contrasting with the ground-colour, but it may also be distinctly contrasting; the maculae are in somewhat grey rings, mostly of the colour of the ground, the reniform macula in its lower end pupilled blackish; the undulate line is lighter and is somewhat more prominent owing to a darker shade before it. Hindwing brownish-grey, towards the base lighter. California. — **ornatus** Sm. exhibits a uniformly ash-grey ground-colour with more distinctly prominent, blacker transverse lines, the maculae being filled up with ferruginous or reddish brown. Probably a northern race of *erratica* from British Columbia and Idaho.
- alcandola*. **A. alcandola** Sm. (= *tristis* B. & McD.) is on the whole somewhat larger than the preceding, and the upper maculae are somewhat larger, too; the ground-colour seems to be less variable, of a very monotonous

and equable light yellowish-grey; the marking is otherwise the same, except the posterior transverse line and the undulate line being parallel almost in their whole course, whereas in the other species they diverge more towards the costa and the proximal margin. Arizona.

A. bimarginalis *Grt.* (12 f) differs from the two others by the contrastingly reddish-yellow costal-marginal part which never shows the reddish tint in the similar *Lampira vittifrons*; besides the collar is coloured like the ground of the forewing, whilst in *vittifrons* it is yellowish-white like the costal-marginal stripe; another mark of distinction are the dark brownish-grey hindwings. An apparently rare species from Arizona and New Mexico. *bimarginalis.*

A. totonaca *Schs.* (12 f) being doubtfully ranged here differs from *bimarginalis* by deeper blackish-brown forewings with a distinctly reddish-brown light costal-marginal stripe with 2 small black spots in it as the beginnings of the subbasal and antemedian lines; both the upper maculae are dark red-brown in a black cell; the marginal area behind the undulate line is light reddish-grey. Hindwings brown. Mexico (Jalapa). *totonaca.*

33. Genus: **Lampira** *Hbn.*

This genus being better known as *Rhynchagrotis* or *Triphaena* has of late been very exhaustively examined by FOSTER BENJAMIN who published the result of his studies in an excellent monography (Bull. of the South. Calif. Ac. Sci. Vol. XX, Dec. 1921). The name *Lampira* *Hbn.* with *fimbria* as the sole type of the genus has the precedence. It contains Noctuids with unspined anterior tibiae, a smooth frons, flattened abdomen, the head and thorax covered with hair and scales; in contrast with the preceding genus *Abagrotis* the antennae are plain, ciliary, and the collar and prothorax are never raised keel-shaped. All the species are very much alike so that it is rather difficult to distinguish them. We follow BENJAMIN's unrivalled arrangement.

L. vittifrons *Grt.* (12 f) is easily discernible from all the others by the yellowish-white costal stripe of the forewing and collar; the thorax is not tufted. Forewing blackish with interrupted, lighter transverse lines and rather indistinct maculae. Hindwing very light, whitish with slightly brownish veins. Colorado, New Mexico, Utah, California. *vittifrons.*

L. trigona *Sm.* (= *cupidissima* *Sm.*) (12 f) has, like *sambo*, short and broad wings and the thorax not tufted; the ♂ antennae are densely scaled, the cilia somewhat longer than the width of the shaft, the antennal end not ciliated. Forewing generally of a light yellowish ground-colour with a reddish or smoke-brownish tint; the markings are all present in the usual shape, though little prominent, only in some cases the maculae are filled with blackish and the transverse lines, too. Hindwing greyish-brown. California, Utah, Colorado, New Mexico, Arizona. *trigona.*

L. sambo *Sm.* is somewhat smaller, and the forewings are somewhat longer, the marking is more distinct, the undulate line light, proximally accompanied by a decidedly darker or blackish shade; the area before the anterior transverse line is mostly just as band-shaped darker or even black. Hindwing blackish with more reddish fringes. Expanse of wings: 29 to 30 mm. Canada (British Columbia, Vancouver). *sambo.*

L. mirabilis *Grt.* (12 f) is to be recognized by a long black basal ray extending to the postmedian line, and by the black filling of the cell likewise extending from the base to beyond the reniform macula, whereas the maculae are white; the thorax exhibits a parted dorsal tuft and usually a red-brown spot in the centre. Forewing coloured greyish-brown, with a lighter marginal area being dusted with grey. Hindwing dark brownish-grey. Expanse of wings: 36 mm. Colorado, Utah, New Mexico, Arizona, Nevada. *mirabilis.*

L. discoidalis *Grt.* (12 g) has narrower, more elongate forewings than all the other species; like in *mirabilis* the cell is filled up with black; the thorax has the same red-brown median spot, and in fresh specimens there are traces of a parted dorsal tuft. Ground-colour varying from a brownish grey to a wood-coloured brown, just like the maculae, the area before the undulate lines being the darkest. Hindwing lighter brownish-grey. Expanse of wings: 34 mm. California, Nevada, Utah. *discoidalis.*

L. placida *Grt.* (12 g) is an extremely variable species, so that hardly one specimen is like the other. Forewing dark brownish-grey with a darker basal and subterminal area, the discal area broad, generally lighter, more brownish, the marginal area of a contrasting grey, the maculae and transverse lines marked somewhat lighter, the latter generally double; a median shade is present. Hindwing dark brownish grey. Very widely distributed from Canada to New Mexico and California. — ab. **minimalis** *Grt.* (12 g) has more reddish tints and single transverse lines, and invariably a distinct median shade. *placida.* *minimalis.*

L. barnesi *Benj.* (12 g). This species is difficult to separate from *forbesi*, *duanca* and *nefascia*, the easiest by the rather different genitals. It is a larger species with a very variable ground-colour; the ring-macula

is small, round, the reniform macula strangulated in the centre, generally darkened at its upper and lower ends; the double transverse lines are darker than the ground, between them it is somewhat lighter; marginal area often somewhat bluish-grey. Hindwing very dark. At the end of the penis there is a large chitinous plate with a spine-like projection at its end, which is absent in all the other species. Arizona, Utah, California. *nevadensis*. — **nevadensis** B. & McD. is a particularly light form with hardly more visible markings. Nevada.

forbesi. **L. forbesi** Benj. has a just as variable though duller ground-colour, mostly smoky-grey, often with a reddish tint, the maculae surrounded with a lighter yellowish; marginal area usually of a more bluish-grey tint with a darkened area before it, the darkest at the costal margin. Penis peculiarly strongly ribbed, by what *forbesi* is discernible from all the other species. From Utah (Stoeckton).

duanca. **L. duanca** Sm. (12 g). Forewing blackish-brown, often tinted reddish with a silky lustre, head and thorax with a yellowish or orange tint; transverse lines distinct, though feeble, maculae small, in whitish rings. It has narrower wings than the very similar *nefascia*. Expanse of wings: 30 to 34 mm. Utah, California.

nefascia. **L. nefascia** Sm. („*negascia*“ ex errore) has the ground-colour of the forewing varying in all shades from yellowish-grey, brownish-grey to brick-coloured red, the marginal area often of a contrasting bluish grey, but just as often not so; it is, on the whole, a smaller species with a darker banded subterminal area, the markings more blurred owing to somewhat darker strewing, with rather small maculae being usually somewhat darker and surrounded by broad rings of the ground-colour. Canada to California and Arizona.

variata. **L. variata** Grt. (= *varix* Grt., *orbitis* Strd.) (12 g, h). The forewing exhibits small bluish-grey scales and above them larger scales of a different colour, varying according to the habitat; in Utah, for instance, there occur more reddish-brown specimens, in California such with a darker and more olive tint, in Northern California, Washington and British Columbia there are on an average more grey forms, but amongst them all kinds of transitions. It is a larger species (36 to 42 mm) with broad wings, the maculae edged with a darker colour, the transverse markings of the ground-colour. Beside the habitats stated above it is also known from *orbis*. Colorado, Nevada, Arizona, and New Mexico. — ab. **orbis** Grt. is monotonously olive-grey or brownish without the bluish-white or greyish-white substratum. California.

scopeops. **L. scopeops** Dyar is on an orange somewhat smaller than *variata* with more distinct and more salient markings and a narrower distal margin and a somewhat lighter, loamy-yellowish ground-colour on the thorax and the bases of the wings, whilst the wings are otherwise of a darker violettish brown, the upper maculae are in whitish rings; the marginal area is bluish ash-grey. British Columbia, Washington, California.

alternata. **L. alternata** Grt. (12 h) is a large species with more quadrangularly shaped wings; the large, oblong ring-macula is somewhat oblique, the reniform macula is large and broad, both are clearly and distinctly surrounded with whitish; the marginal area is generally somewhat lighter; the undulate line is characteristic, for it forms a rather distinct W. The species is common and widely distributed from Canada to Arizona and New Mexico. The brown, darker watered larva with dark oblique subdorsal shades which are posteriorly bordered with a light colour, and with a white, undulate lateral line, lives on oaks, hickory etc.

insularis. **L. insularis** Grt. (= *formalis* Hmps.) (12 i). Forewing purple reddish brown, the costal-marginal area mostly more ash-grey inclusive of the collar; transverse lines blackish, double; a black, short basal ray is present; the reniform macula is in a fine light ring; the cell before and between the maculae is black; the ring-macula is towards the costa often broadly open, the coniform macula is distinctly present; characteristic *confusa*. are the antennae with very long cilia almost looking like ciliary tufts. Canada. — f. **confusa** Sm. (12 h, i) is of a brighter reddish brown with a light yellow collar and costal-marginal stripe, with similar rings round the maculae; undulate line light yellowish, the space before it darker brown. This form extends farther to the south across Washington to California.

exsertistigma. **L. exsertistigma** Morr. (12 h) is presumably the most difficult species of the whole genus and undoubtedly does not represent a stable species, but a form that is about to split into several other species. In its exterior, colouring and marking it is extremely inconstant, and even the genitals prove to be considerably variable, so that owing to the existence of innumerable transitions it is to-day only possible to insert here all the names of the forms merely as forms and not as good species. Characteristic is a large, loose, parted dorsal tuft on the thorax beside finely ciliated ♂ antennae. The ring-macula is above open, the discal area darkened blackish, the coniform macula distinct and of a different colour, the ground-colour rather light, the transverse markings distinct, the collar has a broad black or at least dark distal margin, the cell is not darkened black between the *obscurabilis*. maculae. California. — f. **observabilis** Grt. (12 i) has a darker ground-colour, all the transverse markings are *formatis*. distinct, the maculae blackened, their surroundings strewn with yellowish. — f. **formalis** Grt. (= *faculoides* Strd.) varies in the ground-colour, but it is more frequently lighter than darker, the transverse markings are indistinct. *facula*. — f. **facula** Grt. (= *faculella* Strd.) differs from the preceding by the cell being filled up with black. — f. **niger** *niger*. Sm. is a smaller, more blackish form with a purple tint and likewise the cell filled up with black, whereas

the broad black border on the collar is absent; transverse lines velvety black, double, the space between them somewhat lighter, but the costal part hardly lighter than the other ground of the wing. Washington, Idaho, California. — f. **meta** *Sm.* is distinguished by the contrastingly reddish-brown discal area, whereas the other *meta*. ground-colour exhibits more slate- or lead-coloured tints; the undulate line is yellowish, before it red-brown shading; the cell is not filled up with black. — f. **emarginata** *Grt.* (= *inelegans Sm.*, *faculana Strd.*) (12 i) has *emarginata*. a deep purple brown or blackish-brown ground-colour, the collar not bordered with black and the cell not filled up with black. This form with broad wings originates from California. — f. **carissima** *Harv.* (12 i) has brighter *carissima*. red-brown, broad forewings being tinted purple towards the margin, in the typical form with a yellowish undulate line and fine black veins; transverse lines double, filled up with a somewhat lighter colour. — f. **cupidissima** *Grt.* (12 i) is a form of medium or large size with a peculiarly black-speckled strewing, like „pepper and salt“, *cupidissima*. on the real ground-colour, without the black border of the collar, with two smaller subordinate forms, one of which, f. **laetula** *Grt.* (12 i), has no black filling of the cell, whilst in the other, ab. **distracta** *Sm.*, the cell is before *laetula*, *distracta*. and between the maculae filled up with black or at least dark. In all the 3 forms the ring-macula is U-shaped, above open. Washington, Oregon, California. — f. **morrisonistigma** (= *binominalis Sm.*, *crenulata Sm.*) (12 k) *morrisonistigma*. has dark brown forewings, in the basal and subterminal areas somewhat lighter, dusted with grey, with a distinctly lighter reddish-brown costal area and collar, the latter being broadly bordered with black; the upper maculae are dusted with grey in a black ground of the cell, the coniform macula is bordered with yellowish; the transverse lines are distinctly double, filled up with a lighter colour. From California. The light brown, darker watered larva with narrow lighter dorsal and subdorsal lines and alternately light and black oblique lateral spots lives polyphagous on low plants.

L. cupida *Grt.* (= *velata Wkr.*) (12 k) is a very common and just as variable species which is evi- *cupida*. dently also in a stage of development. Forewing narrow, oblong, with a peculiar silky lustre; the colour is extremely variable from a light yellowish through red-brown tints to deep purple and almost black, the latter dark purple brown form being separated as f. **brunneipennis** *Grt.* The maculae are large, blackish, bordered with *brunneipennis*. reddish, the transverse lines darker, indistinct; the subterminal space is somewhat darkened, the undulate line itself inside at the costal margin marked darker. From Canada and the Central States.

L. belfragei *Sm.* (12 k). This large species (expanse of wings: 40 mm) is only known from Texas; by *belfragei*. the slight silky lustre it somewhat recalls *cupida*; the ground-colouring varies from a loamy yellowish to dark red-brown, more or less dusted; all the transverse lines are double, the undulate line begins at the costal margin with a deeper black spot, proximally mostly bordered by a somewhat darker shade; the maculae are distinct, surrounded by a somewhat lighter colour; but the marking may also be quite indistinct.

L. anchocelioides *Gn.* (12 k) is allied to *cupida*, but it is without any lustre on the dull-coloured wings, *anchocelioides*. which are narrower and somewhat more quadrangular; the posterior transverse line and the undulate line are closer together, whereby the darker band enclosed by the two lines becomes very narrow; the maculae small, the ring-macula is round; the W of the undulate line is but very flat. Canada.

L. brunneicollis *Grt.* (13 c) has grey forewings more or less dusted with reddish-brown, with distinct, *brunneicollis*. darker, though interrupted double transverse lines. Maculae large, in darker rings. The forewing contrasts very much with the dark brown head and collar. Central States to Colorado.

L. rufipectus *Morr.* (12 k) is very much like *brunneicollis*, but easily discernible by the single trans- *rufipectus*. verse lines. The head is likewise dark brown, the chest conspicuously red-brown, the thorax and forewing more lilac-grey, scantily strewn with red-brown. The subterminal area is suffused with blackish. Canada to California and Arizona. The larva is lighter and watered with a darker brown, laterally more greenish with oblique dark subdorsal streaks; it lives on grass. The unknown **L. hero** *Morr.* probably belongs to one of these two latter *hero*. species.

34. Genus: **Cryptocala** *Benj.*

It comprises the species with yellow, black-banded hindwings. Otherwise the markings agree with *Lampra*, except the abdomen not being flattened, but round, cylindrical. The 2nd palpal joint is scaled, the terminal joint bare. The hitherto prevailing name *Rhynchagrotis Hmps.* is untenable, because the type of it is *cupida*.

C. gilvipennis *Grt.* (13 a) is the sole American species with yellow hindwings, of a delicate structure, *gilvipennis*. the forewing varying from a reddish ochreous colour to a greyish brown with blackish single transverse lines, a very oblique ring-macula which reaches below to the reniform macula or is confluent with it. Canada to New York.

35. Genus: **Eueretagrotis** *Sm.*

Distinguished from the preceding genus chiefly by the 2nd palpal joint being in front very hairy; the prothorax and metathorax exhibit loose tufts, the abdomen is roughly haired at its base. Only 4 American species:

sigmoides. **E. sigmoides** *Grt.* (13 a) is a large, fine species, of a deep red-brown colour with an ochreous-whitish costal-marginal stripe, a black basal ray, the cell filled up with black and with grey or brownish maculae in it; transverse lines double, dentate; undulate line light, dentate, with a dark spot before it at the costal margin. Canada, North-Eastern and Central States. — The brown larva with a narrow light dorsal line and dark sub-dorsal spots lives polyphagous on low plants.

perattenta. **E. perattenta** *Grt.* (13 b) is much smaller, more grey, dusted with a purple brown, the posterior transverse line single, distally bordered with grey; the subterminal area behind it is purple brown. Hindwings darker. Canada, Northern and Eastern States to Mississippi, Texas and New York.

attenta. **E. attenta** *Grt.* (13 b) differs by the cell not being filled up with black; the ground-colour is a dull reddish brown, the markings are otherwise the same, but the area behind the undulate line is more grey. Hindwings grey, tinted brown. Canada, Northern and Eastern States.

inattenta. **E. inattenta** *Sm.* is likewise allied to *perattenta* (13 k), but it is larger, darker and very equable in the ground-colour, without the intense strewing; the marginal area is not lighter than the ground; the marking is but very feebly marked, only the deep black ground of the cell is prominent. Hindwings smoky grey, towards the base somewhat yellowish. Expanse of wings: 33 to 38 mm. Canada (Alberta), Washington.

36. Genus: **Pronoctua** *Sm.*

The 2nd palpal joint is in front long-haired, the 3rd obtuse, porrect; the ♂ antennae are ciliated; head and thorax are clad with hair and scales, the thorax with loose tufts in front and behind, the anterior tibiae like in the preceding hairy and unarmed. Forewing broad with a rounded apex and finely undulate distal margin. Only 2 species:

typica. **P. typica** *Sm.* (13 b). Brownish-ochreous, strewn with black, with double dentate transverse stripes and darker pupilled maculae in ochreous rings and surrounded with black, in the darkened cell; marginal area darkened. Hindwing ochreous-brownish. Colorado.

pyrophiloides. **P. pyrophiloides** *Harv.* (13 b) is smaller, more yellowish-grey, otherwise very similarly marked, the cell not blackened. Hindwings much darker greyish-brown with whitish fringes. From California. — **peabodyae** *Dyar*, from Arizona, described according to 1 ♀, has a pinkish-reddish instead of grey ground-colour.

37. Genus: **Protagrotis** *Hmps.*

Allied to the preceding genus, but distinguished from it and all the others by the unspined middle tibiae, and also the posterior tibiae only exhibit one or two spines between the middle and terminal spurs. Head and thorax purely clad with hair. All the rest as in *Pronoctua*.

niveivenosa. **P. niveivenosa** *Grt.* (= *vivalis* *Grt.*) (13 a) is light red-brown with white veins and a short black basal ray; maculae whitish in the brown-dusted cell; transverse lines quite extinct. Hindwing whitish, brownish, at the margin darkened. The ♀ is darker with blacker markings. Nebraska, Colorado.

nichollae. **P. nichollae** *Hmps.* Forewing blackish-brown, mixed with greyish-white, with indistinct, single transverse lines being on the averted sides bordered with white; the ring-macula is marked by single small whitish scales, the reniform macula distally marked white, between them a very indistinct median line; the whitish undulate line is proximally shaded with a blackish brown. Hindwing greyish-brown with a dark discal luna and white fringes. Expanse of wings: 44 mm. Canada (Alberta).

extensa. **P. extensa** *Sm.* (13 b) is described as *Luperina*, but owing to a spine between the pairs of spurs of the posterior tibiae it belongs hereto; it is very closely allied to *niveivenosa*, but it is darker and has no white veins. Colorado.

obscura. **P. obscura** *B. & McD.* (13 a) has 2 spines on the posterior tibiae and in its exterior entirely resembles *Agroperina indela* *Sm.*, but it also resembles *niveivenosa* (13 a). The ground-colour is very variable from light ochreous to reddish brown, mostly with hardly any or without any markings; in darker specimens we notice the traces of a red-brown basal ray, the maculae are somewhat whitish, the posterior transverse line is somewhat lighter than the dark ground; occasionally a scarcely lighter undulate line is pronounced by a somewhat darkened subterminal area. Hindwing light reddish, at the margin smoky. Nevada.

venipicta. **P. venipicta** *Schs.* Head and collar dark brown, the thorax steel-black; forewing dark brown, iridescent, with steel-grey veins strewn with a bluish white, and darker blackish-brown markings;

anterior transverse line very fine, at the costal margin towards the base spotted ochreous, the posterior line punctiform, double, in the lower half proximally accompanied by a straight dark line, at the costal margin distally spotted ochreous; the undulate line consists of small black internerval spots and is situate close behind it. Hindwing blackish-brown. Expanse of wings: 35 mm. Guatemala.

38. Genus: **Apoxestia** *gen. nov.*

Rather closely allied to the Indian genus *Paraxestia*. Proboscis well developed, middle palpal joint obliquely erect, in front long-haired, last joint moderately long, porrect, scaled. The frons exhibits a very slight longitudinal ridge like in *Feltia*; eyes bare, ciliated; male antennae scaled, with some angular projections in the basal halves, so that they look as if they were serrate, here with ciliary tufts, in the distal halves plainly ciliated. Head and thorax long-haired, prothorax and metathorax with loose, scarcely parted tufts, the first abdominal ring with a very long parted tuft; abdomen especially at the base, laterally and at the anus very long-haired. Anterior tibiae spineless, long-haired, middle and posterior tibiae strongly spined. Margin of forewing finely undulate. Only one species:

A. ioglauca Zerny (11 e). Forewing deep brownish-violet, in the proximal half basally, in the discal *ioglauca*. area and anally with large olive-greenish spots, the same colour appearing to a smaller extent in the marginal area subapically and in the cell; three deep velvety brown, interrupted transverse lines traverse the wing, all of them beginning double at the costal margin and bordered with entirely isolated yellowish-white scales, the most intensely at the undulate line, and here, particularly in the anal half, creating the impression of a white line; traces of a reniform macula and a ring-macula, the latter more intermixed with white. Hindwing in both sexes white with a dark discal dot and traces of a subterminal line. Bolivia (Cuesta de Cillutincara).

Subfamily: **Hadeninae**.

This family is characterized by the hairy eyes and by the absence of spines on the middle and posterior tibiae. Proboscis mostly well developed, palpi generally rather short, frons mostly smooth, occasionally provided with projections. The eyes often show very long, conspicuous hairing which, however, may also be very short and scanty; occasionally there are long cilia bordering on the eyes above; also in this group there occur smaller genera with an „anartoid“ type and small, bean-shaped or reniform eyes. The thorax is clad with pure scales alternating with pure hair in all transformations, in the former cases mostly with more abundant tufts on the prothorax and metathorax, as well as at the base of the abdomen. As to the biology, the larvae chiefly live on so-called low plants and grasses; there occur but very few larvae living on trees. Compare also what has been told about the *Hadeninae* in Vol. III, p. 66, and Vol. XI, p. 67.

1. Genus: **Trichestra** *Hmps.*

Small, rather robust species, the thorax covered with hair and coarse scales and exhibiting loose tufts; palpi erect, the second joint in front hairy; the frons is smooth, the eyes bordered with long cilia; the abdomen shows dorsal tufts. The genus contains a dozen of only Central and South American species.

T. stigmatosa Dyar is olive green on the forewing, strewn with blackish, the most densely in the basal *stigmatosa*. area; ring-macula and reniform macula are united into a two-pointed white spot, the space behind it is dusted black as far as the postmedian line; the dentate, white undulate line is only visible at the costal margin, below it it disappears in black shading and reappears in the centre of the margin in the shape of 3 small white spots; anal angle shaded with black; fringes speckled black and white. Hindwing blackish with speckled fringes. Expanse of wings: 25 mm. Mexico (Zacualpan) in August.

T. nigropuncta Drc. (13 h) has red-brown forewings being olive-green in the basal area and on the *nigropuncta*. fringes, strewn with blackish; no maculae except the white, black-edged streak of the reniform macula; transverse lines indistinct, double, the posterior line dentate, both lines separated afar; the white undulate line consists of 2 angles with a jet-black crescentiform spot behind it on the discal fold. Hindwing blackish-brown with ochreous yellowish fringes. Mexico.

T. viridipicta Dogn. is a somewhat larger species from Peru (La Paz) with moss-green forewings, in the *viridipicta*. basal area mixed with yellowish pink and with irregular black transverse stripes. Maculae light green, bordered with ochreous yellow; the distal and proximal halves of the wings are strewn with black, the

posterior transverse line consists of ochreous yellow lunae bordered with black, the undulate line of ochreous-yellow dots; fringes yellow and white; on the veins spotted black. Hindwing of a lustrous whitish colour with grey veins. Expanse of wings: 30 mm.

arbuticolens. **T. arbuticolens** *Btlr.* (13 h). Red-brown, strewn with a darker shade, in the cell dusted with purple brown, the veins striped dark and dusted white; transverse lines double, the posterior line with black and white dots on the veins; the maculae are small, the ring-macula is round, in an ochreous ring, the reniform macula is narrow, bordered with white; the light undulate line is irregularly dentate with dark small sagittae before it. Hindwing dark brown with lighter fringes. From Chile.

renipuncta. **T. renipuncta** *Hmps.* Forewing greyish-brown, dusted somewhat reddish and strewn darker; transverse lines double, the anterior line filled up with grey, the posterior line distally with dark dots; ring-macula obliquely elliptical, encircled with black, the reniform macula proximally with a white line, distally with a white spot, and a white dot above it and two below it; median line indistinct, dark, undulate; the grey undulate line is on each side accompanied by small black spots; marginal area darkened with white dots on the veins. Hindwing whitish, with a brownish hue, in the marginal area darker. Expanse of wings: 22 to 28 mm. South Eastern Peru.

anthophila. **T. anthophila** *Btlr.* has brownish-grey, darker dusted forewings, the anterior transverse line double, the posterior line very indistinct, single, finely dentate; the small maculae are encircled with dark, above and below open; the undulate line consists of a row of small white and black sagittae. Hindwing dark brown with ochreous-whitish fringes. Chile.

melanochra. **T. melanochra** *Hmps.* The black forewing is ochreous-whitish in the basal and postmedian area, dusted with reddish; transverse lines double, filled up with a yellowish white, and there are also traces of a median line; coniform macula jet-black, the upper maculae yellowish-white, encircled with black, the ring-macula red-brown, the reniform macula pupilled blackish; undulate line yellowish white, fringes spotted black and white. Hindwing brownish with black, distally whitish fringes. Expanse of wings: 30 mm. South Eastern Peru.

goniophora. **T. goniophora** *Hmps.* deviates from the other species by the forewing being somewhat angular in the centre of the margin and showing above it a slight concave excision. Forewing yellowish-white, in some places dusted with light green and brownish-red, and scantily strewn with black; transverse lines double, the anterior line black, filled up with white, the posterior line faded brown, at the costal and proximal margins marked white; the upper maculae are of a pure white, encircled with black, the reniform macula L-shaped, and from it a dark median line runs to the proximal margin; the undulate line is white and forms 2 angles, the lower of which extends near to the blackened margin. Hindwing yellowish-white with brownish veins and margin. Expanse of wings: 30 mm. South Eastern Peru.

bicatenata. **T. bicatenata** *Dyar* (14 a) strikingly resembles *Polia olivacea* *Morr.* (16 i). Forewing purple grey, in the discal area darker, mixed with moss-green, at the costal margin lighter with small black spots, submedianly reddish; the dark transverse lines are finely double, the coniform macula quite black, thick; the ring-macula is a light-ringed circle of the ground-colour, the reniform macula is in a broad white ring with a dark pupil; undulate line yellowish-white, spotted, distinctly prominent in the light purple grey marginal area and spotted moss-green. Hindwing purple grey, in the disc lighter. Expanse of wings: 28 mm. Mexico (City) in October.

rufescens. **T. rufescens** *Dogn.* Forewing reddish with a brass lustre, postmedianly strewn with a brownish black, in the marginal area behind the undulate line brown with single brown transverse lines, the posterior line distally forming an obtuse angle; the ring-macula is only marked by some small black scales, the reniform macula by a quadrangular white spot; the white undulate line forms two angles directed towards the margin. Hindwing blackish with a golden lustre. Expanse of wings: 22 mm. Colombia, from Mt. Socorro, taken by FASSL.

mixta. **T. mixta** *Schs.* has lilac grey forewings with a brown tint; the anterior dark brown transverse line filled up with a greyish white, before which at the proximal margin there is a dark brown spot, is below the cell twice distally angled; the ring-macula is a pink dot bordered with white; in the cell-end a dark brown shade, behind it a white line, then a pink line, behind the cell a dark brown, white-edged spot; the fine posterior transverse line is black, proximally accompanied by a white line, distally by a pink shade, the costal margin behind it is pink mixed with lilac and spotted white. Hindwing greyish-brown, towards the base whitish with a dark discal spot. Expanse of wings: 23 mm. Costa Rica (Poas).

albirena. **T. albirena** *Dogn.* Forewing blackish violet, intermixed with coarse olive and white scales; transverse lines marked by olive scales, rather indistinct, the posterior line dentate; ring-macula marked black, the reniform macula of a pure white, crossing the median downwards; the undulate line consists of small black internodal spots; fringes with white dots on the ends of the veins. Hindwing dirty white, distally brownish. Expanse of wings: 23 mm. Costa Rica (Irazu).

plumbea. **T. plumbea** *Dogn.* is reddish-ochreous in the basal area and the cell of the forewing, otherwise greenish lead-coloured; at the costal margin 3 black dots on each side bordered with white; on the transverse vein an

irregular white spot bordered with black above a white discal dot which is surrounded with black; in the distal third of the proximal margin there is a black-strewn part proximally bordered with white, distally defined by some white scales; distal margin black with white dots on the veins and a white-dusted spot opposite the cell; fringes speckled black and white. Hindwing white, strewn with green and yellowish-reddish scales. Expanse of wings: 24 mm. Colombia (Cali).

2. Genus: **Barathra** Hbn.

Distinguished from the preceding by the eyes not being ciliated and by the anterior tibiae exhibiting a long bent claw at the end on the outside. Abdomen tufted, the basal tuft very large. Hereto belongs the cabbage-moth being often noxious in Europe and Asia, *B. brassicae* L. (Vol. III, p. 67, t. 15 e; Vol. XI, p. 68). Only 2 American species:

B. configurata Wkr. (= occidenta Grt.) (13 h). Forewing greyish-brown, strewn with a darker shade, *configurata*. in the proximal part and subterminally lighter olive-brown with indistinctly double transverse lines; maculae large, encircled with black, the reniform macula spotted white; undulate line white, before and behind it black streaks. Hindwing light, on the margin and veins brownish. Widely distributed and common in the United States and Mexico.

B. curialis Sm. (13 i) is darker, in the basal and postmedian areas reddish, also in the cell on the *curialis*. discal fold, in the proximal-marginal area subbasally greenish; transverse lines single, black, dentate; reniform macula white, bordered and pupilled with black, undulate line whitish. Hindwing brownish-grey, towards the margin darker. Canada, United States (Maine, New Hampshire).

3. Genus: **Miodera** Sm.

Allied to the genus *Polia* from which it differs above all by the rough, convex frons and by the squat, short abdomen, long-combed antennae with serrate ends, and short, broad, triangular wings. Only 1 species:

M. stigmata Sm. (20 a) somewhat recalls *P. ectypa* Morr. (16 b). Forewing grey, dusted with a smoky *stigmata*. brown and blackish, and strewn with yellow scales, with a short black basal ray; transverse lines double, black, filled up with yellowish; coniform macula encircled with black, the upper maculae encircled with yellow, the reniform macula below filled up with black, between both the cell is black; before and behind the yellow undulate line forming a distinct W there is darker shading. Hindwing yellowish brownish-grey. California.

4. Genus: **Discestra** Hmps.

Characterized by a crescentiform horny projection on the frons with a raised margin and a horny plate below it; the thorax is predominantly clad with scales, in front and behind with parted tufts. Otherwise on the whole agreeing with *Polia*. As to the genus comp. Vol. III, p. 67, and Vol. XI, p. 68.

D. florida Sm. (13 i). Forewing whitish, strewn with yellowish and dark, with double black transverse *florida*. lines, the posterior line dentate, and small maculae filled up with blackish, and an indistinct discal shade; undulate line white, proximally shaded with dark, at the costal margin and discal fold spotted darker. Hindwing white with a punctiform postmedian line and a faded subterminal band. From Florida.

D. chartaria Grt. (20 a) has likewise whitish wings but much more intensely suffused with brown, *chartaria*. with fine black transverse lines, the anterior lines double, the posterior line sharply dentate, with well developed maculae, the reniform macula in the lower half filled up with black; the white undulate line is dentate, behind it on the discal fold a darker spot. Hindwing white with brownish veins and margin. Washington, Colorado, California.

D. hadeniformis Sm. (13 i) was described as *Mamestra*, but it belongs hereto. Forewing light yellowish- *hadeniformis*. grey, strewn with black, the proximal margin and marginal area more intensely shaded with ash-grey, with very indistinct double transverse lines, the posterior line distally bordered with whitish; coniform macula short and broad, surrounded with black, the upper maculae large, in green rings and surrounded with black, the reniform macula with a darker pupil; a faded discal shade is present; undulate line white with a rather distinct W. Hindwing brownish-grey with darker veins and margin. Colorado.

5. Genus: **Craterestra** Hmps.

Distinguished from the allied preceding genus by a horny, truncately conical frontal projection with a horny plate below it; the abdomen has a longer lateral hairy cover, otherwise everything agrees with *Discestra*. As to the genus comp. Vol. III, p. 67, and Vol. XI, p. 68.

- lucina*. **C. lucina** Drc. (20 b) has light greyish-brown forewings, in some places dusted with purple brown, the most intensely in the area between the antemedian line and median line; the anterior transverse lines are double, the posterior line very indistinct; coniform macula very short and broad, surrounded with black; the ring-macula is above pointed and below widened, the reniform macula very indistinct, between both there runs an undulate median line. Undulate line light, proximally bordered by small dark spots, the marginal area behind it is darker. Hindwing dark greyish-brown. Mexico.
- niveopicta*. **C. niveopicta** Btlr. (= *florinda* Btlr.) (14 a). Purple brown, dusted with black and grey, with double anterior and single sharply dentate posterior transverse lines, the latter line distally bordered with grey, and black streaks run to it from the reniform macula which is open above and below; traces of the median line; the undulate line is marked by a row of small black, white-dotted streaks. Hindwing white with brownish veins and margin, in the ♀ entirely darkened. Chile.
- terranea*. **C. terranea** Btlr. (14 a). Reddish-brown, strewn with black, marked the same as the preceding, but the white dots of the undulate line are absent, but instead there are ochreous-yellow and black small sagittae. Hindwing yellowish-white with brownish veins and margin. Chile.
- yakima*. **C. yakima** Sm. (13 i). Forewing greyish-white, thickly strewn with greyish brown, with a black basal ray, with quite indistinct, only at the costal margin better marked double transverse lines; reniform macula below filled up with dark; the indistinct whitish undulate line exhibits proximally small dark sagittae, behind it the marginal area is darkened. Hindwing of a pure white with a dark margin. Washington, Utah.

6. Genus: **Scotogramma** Sm.

It has quite the same anatomical marks as the preceding genus, but the frons has no conical projection, but a rounded convexity with a slight vertical ridge and a horny plate below it. All the rest quite the same. Comp. also Vol. III, p. 68, and Vol. XI, p. 69.

- orida*. **S. orida** Sm. (13 i). Forewing greyish-white, thickly strewn with brownish black, with quite indistinct transverse lines, only at the costal margin better marked, the posterior line pointedly dentate on the veins; maculae with dark pupils and in white rings; undulate line white with a distinct W, in the centre behind it a dark spot. Hindwing white with a blackish-brown marginal band. United States (Utah).
- nevada*. **S. nevada** B. & McD. (14 a) is in the colouring and marking very similar to *orida* and also to *Cr. yakima* (31 i), but the hindwing is in the ♂ of a pure white with a fine, smoky grey marginal line and with a postmedian line marked by dots on the veins, in the ♀ smoky brown, towards the base somewhat lighter. Nevada.
- trifolii*. **S. trifolii** Rott. (= *inquieta* Wkr., *glaucovaria* Wkr., *major* Spr.). This extremely common species has been dealt with at large in the palearctic part (Vol. III, p. 68, t. 15 g) and also occurs in America from Canada down to Arizona and Mexico; it is before me from Mexico City, taken in July; then it also occurs again in Chile.
- albifusa*. — f. **albifusa** Wkr. has more red-brown forewings with whitish dusting in the costal and subterminal areas, the undulate line shows stronger black sagittae in front of it. The type of this form originates from Nova Scotia. As to the Indian forms of this species vid. Vol. XI, p. 69, 70.
- mutata*. **S. mutata** Dod. is very similar to *trifolii* (Vol. III, t. 15 g), of a more slender structure, with more extended wings, lighter with more contrasting markings and a more pointed W in the undulate line. The hindwing is darker. From Canada, Colorado, Utah to California, Texas and Arizona *).
- oregonica*. **S. oregonica** Wkr. (14 a), which HAMPSON considers to be a form of *trifolii*, is a distinct species. It looks very much like *trifolii* and is marked the same, but the ground-colour of the forewing is greyer, more thickly strewn with light brown. The type is from Oregon. — The form **morana** Sm. has a more yellowish greyish-brown ground-colour, of a very uniform tint, without contrasting markings; the undulate line is broken, without distinct small sagittae in front of it, mostly only with a feeble shade, which is very conspicuous on the under surface as a dark band. Colorado, Wyoming, Yellowstone Park, Washington, British Columbia.
- harnhardi*. **S. harnhardi** B. & Benj. is very similar to *densa* Smith (p. 105) having now been placed to this genus. Forewing dull red-brown intermixed with black scales, with effaced markings, instead of the reniform macula only a darkened patch; the undulate line is only shown by the somewhat lighter marginal area. Hindwing uniformly dark like the forewing with somewhat darker veins and a lighter basal area. Expanse of wings: 33 mm. Utah.
- addenda*. **S. addenda** B. & Benj. in its exterior resembles *submarina* (13 k). Forewing narrower, dull olive-grey, with double anterior transverse lines and a single, on the veins pointedly dentate posterior transverse line; the ring-macula and coniform macula are absent, the reniform macula only feebly traceable in a darkening

*) As we have been lately informed by Mr. BENJAMIN, it is to be placed to the genus *Cardepiia*, whereas *francisca* (p. 105), *megaera* (p. 105) and *densa* (p. 105) are to be transferred from *Polia* to this genus, just like *obesula* and *ortruda* (p. 98).

of the median shade, the undulate line is only a very faint shade; fringes not speckled. Hindwing dark, fringes and basal area lighter. Expanse of wings: 35 mm. Colorado.

S. alta B. & Benj. differs in the exterior from *oregonica* by grey forewings with a yellowish tint, *alta*, without any reddish-brown admixture and more prominent markings. From Alberta.

S. subalbida B. & Benj. is likewise not dissimilar to typical *oregonica*, but it is smaller, with an *subalbida*, almost white under surface and different genital organ. Alaska.

S. inconcinna Sm. has bluish-grey forewings thickly strewn with a brownish black, in the discal area *inconcinna*, dusted with black, with black transverse stripes being bordered with grey, the posterior stripe dentate with white dots on the veins; the large grey maculae are surrounded with black and pupilled darker; undulate line grey, indistinct, with darker small sagittae in front of it. Hindwing brownish-grey. Colorado.

S. fervida B. & McD. (14 b) is a most variable species closely allied with *trifolii* from which it *fervida*, is easily discernible by the very much expanded lower end of the reniform macula, which is pupilled bluish-black, and by the much flatter undulate line without a distinct W. The ground-colour varies from greyish-brown to red-brown, strewn and marked with bluish-black, but mostly very indistinctly, the transverse lines well marked double, filled up with a lighter colour; marginal area intensely dusted with bluish-black. Hindwing brownish-grey with a broad marginal darkening, in the ♀ still darker. From New Mexico. — f. **proxima** *proxima*. B. & Benj. is much lighter, more brownish-grey. Utah.

S. gatei Sm. (14 b) is very similar to *fervida*, but it has darker forewings and much lighter hindwings; *gatei*, the undulate line exhibits opposite the cell-end a deep angle filled up with a darker colour. The genital organ exhibit an exterior extraordinarily different from that of *fervida*, which has narrow rounded valval ends, whereas in *gatei* they are broad quadrangular extended into 2 projecting angles. Expanse of wings: 30 mm. New Mexico.

S. castrae B. & McD. (14 b) has brown forewings suffused with reddish pink, with a contrastingly *castrae*, prominent marking, double transverse lines filled up with reddish pink, the maculae filled up with pink, the reniform macula pupilled dark; undulate line pink, farther below divided into pink triangles which are inside bordered with black, with the apex turned towards the base. Hindwing yellowish brownish-grey, with a broad darker marginal band. New Mexico. — The form **ultra** B. & Benj. is less contrasting, without a lighter discal area. *ultra*.

S. fulgora B. & McD. (14 c) is similar to *D. hadeniformis* (13 i) from which it differs by the plainly *fulgora*, rounded frontal projection. Forewing dark smoky grey with a faint basal ray and effaced double transverse lines; the large coniform macula is filled up with dark, the upper maculae are surrounded with white, the ring-macula oblong-oblique, the reniform macula in the lower half filled up with dark; the prominently white undulate line has a distinct W and in front of it in the centre dark sagittae. Hindwing whitish, at the margin smoky. Utah, California.

S. repentina Morr. On the light grey forewing the discal area is darkened blackish-brown; both the *repentina*, transverse lines are double, undulate, the posterior line distally shaded dark; the median line is strongly dentate the large maculae are light, the reniform macula somewhat darkened, indistinctly defined; the undulate line is yellowish brownish-grey, proximally shaded dark, without a distinct W. Hindwing brownish-grey, towards the base lighter. Expanse of wings: 33 mm. New Jersey *).

S. ptilodonta Grt. (14 a) has brownish-ochreous forewings, thickly strewn with a darker shade, with *ptilodonta*, a black basal ray and indistinct transverse lines being only better marked at the costal margin, the posterior line double, towards the margin with black and white dots on the veins; the large maculae are surrounded with black, the reniform macula below pupilled dark; undulate line indistinctly lighter, proximally with small black sagittae, behind it the marginal area is darkened. Hindwing of a pure white. Arizona.

S. defessa Grt. (13 i) resembles *ptilodonta*, but it is larger on an average, less strewn with dark, the *defessa*, transverse lines almost only traceable at the costal margin, the posterior line reduced to dots on the veins; the maculae are small, the ring-macula above and below open. Hindwing in the marginal area and on the veins dusted with a brownish grey. California.

S. submarina Grt. (13 k) is a very characteristic species, ochreous-white, densely strewn with brown, *submarina*, with dentate single black transverse lines and a brownish discal shade. No maculae except a small dark luna in the place of the reniform macula. Hindwing quite light brownish with a darker marginal area, a central dot and traces of a transverse line behind it. Montana, Oregon, Arizona.

S. mendosica Hmps. (13 k), the only representative of the genus in Argentina, has brownish flesh- *mendosica*, coloured forewings densely strewn with blackish, with single dark transverse lines, the posterior line strongly dentate; the maculae and a median shade are only traceable; the undulate line is represented by light dots with small dark sagittae before them. Hindwing brownish, towards the margin darker. Described according to a ♀ from Aconcagua.

*) The species is to be eliminated; it is the palearctic *serena* Schiff. (Vol. III, t. 17 f.) which was sold as an American species by an unscrupulous dealer, but which does not occur in America.

7. Genus: **Catephiodes** *Hmps.*

It is discernible from the preceding by longer palpi being in front scaled, not hairy, particularly the last joint being very long. The frons exhibits a slightly rounded convexity with a horny plate below it; the thorax is neither hairy, but only scaled. Only one species:

zuelana. **C. zuelana** *Schs.* (= *trinidensis* *Kaye*) (14 b). Forewing dark brown, behind the centre dusted with whitish, in some places strewn with a bluish white below the costal margin and between the lower radial branches; transverse lines black, irregularly dentate; the small maculae are surrounded with black. Undulate line white, proximally marked black. Hindwing diaphanous white, at the distal and costal margins broad, at the proximal margin narrow blackish-brown. Venezuela and Trinidad.

8. Genus: **Anarta** *O.*

Chiefly characterized by the small, reniform, not ciliated eyes; the frons as in the preceding genus. Body for the greatest part covered with hair intermixed with hair-like scales; abdomen very coarsely haired and with a hair-tuft on the dorsum of the first ring. Predominantly smaller Noctuids flying in day-time, from arctic regions, also one antarctic representative. — Formerly this genus and the closely allied genera were ranged as *Heliothinae* among the Noctuids at a quite different place. *Comp. Vol. III, p. 252.*

trisema. **A. trisema** *Mab.* (14 b). Forewing greyish-white, strewn with black, with a black, red-dusted discal area, in it the coniform macula marked by a white longitudinal stripe, the two upper maculae are likewise whitish, small; behind the postmedian line a row of short red and black streaks, similar ones in the upper marginal half behind the undulate line. Fringes black speckled with white. Hindwing grey, at the proximal and distal margins dusted with black. Fuegia.

dolosa. **A. dolosa** *B. & Benj.* is very similar to the following *staudingeri* (*Vol. III, t. 50 b*), but it has like *trisema* strongly serrate antennae provided with ciliary tufts. Forewing dull slaty-grey, tinted brownish, and strewn with white. Transverse lines single, black, the anterior line faded, proximally bordered with grey, the posterior line dentate, distally bordered with a lighter colour; maculae small, lighter, feebly encircled with black; the undulate line is a dark shade bending proximad on the middle radial and touching the postmedian line; fringes dark slaty grey, mixed with white, but not speckled. Hindwing light, on the veins brownish with a broad black marginal band, a crescentiform discal spot and purely white fringes. Expanse of wings: 26 to 28 mm. Colorado.

staudingeri. **A. staudingeri** *Auriv.* has been dealt with in the palearctic part (*Vol. III, p. 252*) and figured there on t. 50 b; it is not certain whether the nomenclatural form occurs in America, but as it may be of a circum-polar range, it is also mentioned as American in recent American catalogues, for which reason we at least quote it. The specimens from Colorado found in collections by this name, belong to the following:

möschleri. **A. möschleri** *Stgr.* with brownish-black forewings, intermixed with white scales, black single transverse lines, the posterior line dentate and distally bordered with white; the small maculae are white, bordered with black, the reniform macula indistinct, with a darker pupil, before and behind it small whitish crescents; undulate line light, proximally accompanied by small black lunae. Hindwing white, more or less brownish with a blackish-brown marginal band and discal spot, the latter being connected with the base by a blackish-brown ray. Expanse of wings: 26 to 28 mm. — *staudingeri* is larger and has more olive-yellow and brown tints and a quite different genital organ. Colorado.

subfumosa. **A. subfumosa** *Gibs.* (20 k) is most similar to *staudingeri*. Forewing dull smoky brown, dusted with grey, occasionally strewn with golden yellow scales; all the markings indistinctly whitish, the maculae very small, the most distinct being the posterior transverse line. The white hindwing shows a rather broad dark brown marginal band. North Western Canada.

magna. **A. magna** *B. & Benj.* is closely allied to the following *richardsoni*, but of a quite different habitus, larger, without traces of orange or ochreous scaling, the total impression of the forewing being a faded, little contrasting marking. The hindwing beneath exhibits a strong black connecting streak from the discal spot to the base, which is only occasionally traceable in *richardsoni*. Expanse of wings: 38 mm. Colorado („Bullion Peak“).

richardsoni. **A. richardsoni** *Curt.* (= *septentrionalis* *Wkr.*) (*vol. III, t. 50 b*) is likewise widely distributed in the palearctic region and described in *Vol. III, p. 252*, and figured there. Much larger than *staudingeri*, similarly marked, but more mixed with yellow, with strong black sagittae before the undulate line. Widely distributed in Greenland, Alaska, Canada. — **A. lanuginosa** *Sm.* The anterior transverse line in this form extends in a slightly

oblique direction to the proximal margin, only forming an angle on the median, whereas in *richardsoni* it forms in the interspaces bows regularly turned towards the margin.

A. leucocycla *Stgr.* Forewing blackish-brown, scantily strewn with white, the transverse lines being *leucocycla*, prominently white on the dark ground, the posterior line sharply dentate, and with small white maculae; the undulate line is white, too, in the centre distally bent. Hindwing yellowish, strewn with blackish brown, in the proximal part more strongly dusted with blackish brown, with a black discal luna and a broad blackish brown marginal band. Expanse of wings: 28 mm. Greenland, North Western Canada.

A. quadrilunata *Grt.* (13 k) is on the white ground of the forewing so densely dusted with brown that *quadrilunata*, a uniformly light brown surface is produced, on which the single, black, dentate transverse lines and the sole reniform macula, a dark luna, appear as the only markings. Hindwing whitish with a black discal luna and marginal band. From Colorado.

A. lagganata *B. & Benj.* has somewhat less strangulated eyes than the other *Anarta* and somewhat *lagganata*, recalls small *Lasiestra uniformis* (14 d), for which reason it might not wrongly be ranged in the latter genus; otherwise it is the most closely allied to *quadrilunata* (13 k) by its similar marking. Forewing dull smoky brown, the anterior transverse line effaced, shadow-like, no maculae except a small dark spot at the cell-end; posterior transverse line likewise rather indistinct. Hindwing in the disc white, the base, proximal margin and a broad marginal band smoky brown, the large oblong discal spot blackish-brown. Expanse of wings: 28 to 32 mm Alberta (Laggan).

A. etacta *Sm.* (14 c) is a larger species, on the forewing grey mixed with blackish-brown and moss- *etacta*, green, with black transverse lines bordered with white; coniform macula marked moss-green, the upper maculae in white rings and surrounded with black; the undulate line is only marked by the contrast of colours between the blackish-brown shade accompanying it proximally and the greenish-yellow marginal area. Hindwing blackish-brown with black marginal lunae proximally bordered with white. Alaska.

A. membroa *Morr.* Forewing dark grey, marked black, with light transverse lines bordered with a *membroa*, bluish grey; the coniform macula is a black spot extending to the posterior dentate transverse line; maculae light bluish-grey, surrounded with black, between them a black median shade passes through; marginal area bluish-grey with a blackish costal spot. Undulate line light with traces of a W, bordered with blackish, the deepest at the costal margin; fringes speckled black and white. Hindwing brownish-black with an indistinct discal spot and transverse line behind it. Expanse of wings: 33 mm. New Hampshire (White Mts.).

A. myrtilli *L.* is a well known and widely distributed species, having been dealt with in the palaearctic *myrtilli*, part (Vol. III, p. 252) and figured there on t. 50 b, and also occurs in America, in Canada and Colorado. The form **acadiensis** *Beth.* is smaller, darker, less red, with a brighter yellow and more extensive spot on the hindwing. *acadiensis*. The typical *myrtilli* perhaps does not occur in America at all. From Alaska.

A. cordigera *Thnbg.* (= *luteola* *Grt. & Rob.*) (Vol. III, t. 50 c). Of this species we may say the same *cordigera*, as of *myrtilli* (comp. Vol. III, p. 253). It has become known from Labrador and Colorado.

A. mimuli *Behr* is on its body and forewing blackish, with quite indistinct transverse lines marked *mimuli*, whitish; the light undulate line expands at the anal angle into a larger spot. The hindwing is like in *cordigera* yellow with a jet-black marginal band. California. — The larva is reported to resemble that of *myrtilli* and to live on *Eunanus tolmiaci*, *Antirrhinum kingii*, and *Mimulus scrophularia*.

A. impingens *Wkr.* (= *curta* *Morr.*, *nivaria* *Grt.*, *perpura* *Morr.*) (14 c) has lilac-grey forewings strewn *impingens*, with brown, with black transverse lines, the posterior line being sharply dentate, and with an intense black median shade between the entirely indistinct maculae; the undulate line is light, proximally shaded with brown, with small black sagittae. The yellowish hindwing is dusted with brownish-red, with a faded brown marginal band and discal luna. The ♀ is much darker. British Columbia, Colorado.

A. phaea *Hmps.* (13 k) is a very dark blackish-brown species strewn with grey and white, with a *phaea*, short black basal ray, incomplete indistinct transverse lines and small maculae surrounded with whitish; the undulate line consists of white dots, proximally with small black sagittae. Hindwing greyish-brown with whitish fringes. From the arctic parts of America (Victoria Land, Cambridge Bay).

A. melanopa *Thnbg.* (= *nigrolunata* *Pack.*) (Vol. III, t. 50 c). This widely distributed, chiefly palaearctic *melanopa*, species (Vol. III, p. 253) also occurs in Canada and on the higher mountains of the United States as far as down to Colorado and New Mexico and seems to be less variable in the New World. — The red larva with longitudinal yellow stripes lives on species of *Vaccinium*.

A. laerta *Sm.* has smoky brown forewings with single black transverse lines, the posterior line being *laerta*, dentate. Maculae small, encircled with black or also not, reniform macula blackish. Hindwing black, in the disc dirty white with a large black discal luna. The species is the most similar to *melanopa* from which it differs

by its more uniformly dirty brownish ground-colour and much darker hindwings with very much reduced white. Expanse of wings: 22 to 27 mm. Utah (Silver Lake, Mt. Rainier).

- sierrae*. **A. sierrae** B. & McD. (14 c) is closely allied to *laerta* Sm. from which it differs by more variegated forewings and more greenish-black than brownish-black tints. The forewing is greenish-black, in the discal area especially much dusted with white, so that there remains of the ground-colour chiefly only a small spot at the proximal margin and a larger one at the costal margin, the latter spot extending obliquely to the dentate postmedian line and containing the whitish-pupilled reniform macula; the undulate line consists of small, irregular, dark spots with a larger darker one at the costal margin, on both sides scaled light. Fringes speckled. Hindwing uniformly smoky-black with white fringes and a white spot partly showing through from beneath.
- laertidia*. Expanse of wings: 25 mm. California. — **laertidia** B. & McD. denotes specimens with a white spot also on the upper surface of the hindwing, as in *laerta*.
- flanda*. **A. flanda** Sm. (14 c). Forewing grey, in the discal area dusted with olive-yellow, marked black and often so intensely strewn with black that only the transverse lines and the marginal area appear grey; the anterior transverse lines are double, filled up with grey, the posterior line is single, on the veins dentate, narrowly bordered with grey; the course of the undulate line is only marked by the contrast between the black postmedian area and the grey marginal area; maculae small, grey. Hindwing dull yellow with a blackish marginal band and discal luna, at the base and proximal margin darkened. Expanse of wings: 25 to 29 mm. New Foundland.
- squara*. **A. squara** Sm. is a larger species, on the forewing dull smoky brown, more or less strewn with black and grey, sometimes also with yellowish, with single black, more or less faded transverse lines, antemedianly generally more intensely dusted with grey; the maculae are large, the ring-macula obliquely oval, lighter than the ground; the undulate line has proximally small blackish spots. Hindwing dull yellowish, at the proximal margin brownish, with a black marginal band and discal luna. Expanse of wings: 32 to 34 mm. From Greenland.
- hampa*. **A. hampa** Sm. (14 c) has dull smoky grey forewings marked black and grey, with single black transverse stripes bordered with grey on the averted sides, the posterior stripe being dentate; median shade often marked; the maculae are small, narrowly surrounded with grey, the coniform macula distinct; the undulate line is grey or yellowish, before it hued darker. Hindwing almost white, tinted very light yellowish, at the base and proximal margin brownish, with a broad blackish marginal band, a dentate postmedian line, and discal luna. Expanse of wings: 28 to 30 mm. New Hampshire (White Mountains).
- poca*. **A. poca** B. & Benj. is very similar to *hampa* from which it constantly differs by more strongly serrate, remarkably yellowish antennae; head and thorax in the ♂ more olive, in the ♀ more grey. Forewing blackish, intensely strewn with whitish, with black single transverse lines, the posterior line dentate, distally distinctly bordered with white. Coniform macula pupilled ochreous-yellow and surrounded with black; the upper maculae are whitish; with grey pupils and surrounded with black, the light undulate line is proximally marked black. Hindwing whitish, dusted with a brownish grey, with a broad black marginal band and discal luna. Expanse of wings: 27 to 31 mm. Alberta (British Columbia).
- mimula*. **A. mimula** Grt. Forewing olive-blackish with black, interrupted transverse lines, a minute ring-macula and a dark-pupilled reniform macula in a yellowish-white ring, behind the coniform macula with a white patch as far as the posterior transverse line; the interrupted undulate line consists of small white spots; fringes speckled white. Hindwing blackish brownish-grey with white fringes, with a diaphanous discal spot and marginal band. Expanse of wings: 25 mm. New Mexico.
- discolor*. **A. discolor** Sm. (14 c). Light ochreous-yellowish, densely dusted with blackish-brown, and strewn with irregularly dentate black transverse lines and small, indistinct dark maculae, the reniform macula X-shaped; the undulate line consists of small black sagittae. Hindwing blackish-brown. Expanse of wings: 30 mm. Colorado.

9. Genus: **Lasiestra** Hmps.

Proboscis developed, the second joint of the erect palpi long-haired, frons smooth, the large eyes bordered with long cilia. Body only clad with hair without any admixture of scales and without tufts, only the first abdominal rings exhibiting tufts. A number of northernmore species which in the exterior partly recall large *Anarta*, to which we add some tropical, very heterogeneous, probably not congeneric forms. Comp. Vol. III, p. 84, and Vol. XI, p. 73.

- subdita*. **L. subdita** Mschr. (13 k). Bluish-grey, strewn with black and in the centre of the discal area dusted with brownish, with a straight black basal ray; the black transverse lines strong, the posterior line strongly dentate, and there is also a black median line; the upper maculae are very small, bluish-white, surrounded with black; the undulate line is marked by small black spots on its proximal side towards the costal and proximal margins, the marginal area behind it is darker. Hindwing blackish-brown with white fringes. Labrador.

L. albinuda Sm. Dark ash-grey, dusted with a brownish black; the single indistinct transverse lines are faded; the upper maculae are small, slightly darker, the median shade is only distinct towards the costal margin, the undulate line is proximally shaded with dark. Hindwing deep blackish-brown, with a darker, distally lighter yellowish median shade and a large discal spot; fringes light. Expanse of wings: 32 to 33 mm. Labrador. *albinuda.*

L. phoca Mschr. (14 d). Forewing dull brown, thickly strewn with grey; the transverse lines are only traceable, the posterior line is somewhat dentate; the upper maculae are small faded grey spots with darker spots between them. Hindwing brownish-grey. Labrador, Alberta. *phoca.*

L. promulsa Morr. (= infusata Sm.) (13 k, 14 d) has ochreous-brownish forewings thickly strewn with a darker colour, with darker undulate or dentate transverse lines and a faded median shade without maculae; the undulate line is proximally shaded with a darker colour, the fringes ochreous-yellow speckled with blackish-brown. Hindwing ochreous-brownish, in the marginal area darkened. Colorado. *promulsa.*

L. luteola Sm. is in the exterior very similar to the following *uniformis* (14 d), more slender with a more intense marking, the two transverse lines on the sides facing each other shaded with dark, which is not the case in *uniformis*. British Columbia. *luteola.*

L. uniformis Sm. (14 d) is very much like *luteola*, of a duller brown, dusted with a greenish grey, with the same darker transverse lines, but the posterior line not dentate but only undulate, without a distinct median shade, the maculae quite indistinctly marked brown, with somewhat darker brown small spots between them. Hindwing greyish-brown with yellowish fringes. Canada, Colorado. *uniformis.*

L. carminea Dogn. (14 b). This species having been described as a *Nephelodes*, as well as the following fit well to *Lasiestra* in their anatomical marks, although they seem not to belong to it at all owing to their exterior; the eyes surrounded by long black cilia, the hairy cover of the body without any essential formation of tufts etc. are not different. Head and collar bright ferruginous yellow; forewing flesh-coloured reddish brown, in the discal area densely dusted with red-brown, in the basal and subterninal areas and costally strewn with a bluish white; anterior transverse line double black, filled up with a bluish white, the posterior line brownish, dentate, likewise double and its filling strewn with a bluish white. Maculae large, round, finely encircled with black, filled up with a greenish loam-colour, in the upper halves strewn with a violettish white, the reniform macula with a concentric, olive-blackish ring; from it a black faded median line runs to the proximal margin; undulate line of brownish crescentiform streaks defined towards the more olive-brownish marginal area. Fringes purple-pink like the hindwing, the proximal-marginal part of which is shaded with a brownish black. This magnificent species originates from Mt. Socorro (Colombian Western Cordilleras), from an altitude of 3500 m, taken by FASSL. *carminea.*

L. scurrilis sp. n. (14 d) is a magnificent, easily recognizable insect: on the forewing olive-green, with 3 maculae filled up with a deep blackish brown, fine, single, black transverse stripes being on the averted sides edged with a greenish azure colour, the same are one spot each between the upper maculae, at the apex of the coniform macula, fine strewing on the veins in the discal area, as well as high marginal lunae forming the distal border of the jet-black undulate line. Hindwing blackish-grey, margin and fringes deep flesh-coloured. Anal tuft ferruginous yellow. Described according to 1 ♂ from Bolivia (Cuesta de Cillutincara). *scurrilis.*

L. ciocolatina sp. n. (14 d). Forewing with a sharp apex, chestnut-brown, intensely strewn with a lilac and bluish white, so that only the marginal area being obliquely cut off by an apical patch with lilac-white strewing remains of a pure brown. The fine brown double transverse lines are not dentate, the maculae in concentric rings, with pupils of a purer brown, the ring-macula oval, oblique; from the lower proximal end of the reniform macula a distally faded, brown median shade extends obliquely to the centre of the proximal margin; no undulate line; in the terminal area the veins are somewhat dusted with lilac-whitish; fringes purple-grey. Hindwing yellowish-white, at the costal and distal margins dusted with a yellowish brown. Several ♂♂ from Mt. Tolima, at an altitude of 4000 m (Colombian Central Cordilleras), by FASSL. *ciocolatina.*

L. plumbifusa sp. n. (14 d) is marked almost the same as *ciocolatina*, but much darker blackish-brown with broader wings without the pointed apex, strewn with a lilac grey of an intense leaden reflection, without the light apical patch; the reniform macula is narrower, oblong-oval, not reniform, but very indistinctly surrounded by a concentric ring, the coniform macula distinctly present; the posterior transverse line is not so oblique in its course and therefore ends nearer at the anal angle; an indistinct undulate line is present and particularly towards the anal angle spotted somewhat ferruginous-yellowish. Hindwing blackish-brown, fringes distally whitish. Several couples from Bolivia (Cuesta de Cillutincara). *plumbifusa.*

L. consecatrix sp. n. (14 e) very much resembles *plumbifusa*, but it has still broader and obtuser wings of a darker colour, more purple black with a bronze lustre, strewn with coarse violet scales of a leaden reflection, particularly also in the terminal area which remains red-brown in *plumbifusa*; maculae still smaller, the ring-macula is a plain, small circle; the posterior transverse line is more curved and bends very much towards *consecatrix.*

the margin especially above the upper median branch; the undulate line is defined against the leaden-violet marginal area only by the contrast between the dark postmedian area. Hindwing blackish-grey. Several specimens from Mt. Tolima (Colombia). — **lentiginosa** *form. nov.* (14 e) seems to me to belong to it; it has the maculae filled up with a ferruginous yellowish colour, the reniform macula below distally with a bluish-white dot. From the Quindiu Pass.

10. Genus: **Lasionycta** *Auriv.*

It entirely resembles the preceding genus in the anatomical marks, but the thorax is interspersed with scales, and the prothorax and metathorax exhibit loose tufts. As to the genus itself and its palearctic forms vid. Vol. III, p. 85 and tables 20 and 21.

- rainierii.* **L. rainierii** *Sm.* (14 e) is on the forewing bluish-grey, dusted with a blackish brown, in the discal area darker with blackish transverse lines, the posterior line dentate with grey maculae encircled with black in a blackish ground; the undulate line is formed by small grey lunae proximally with small black sagittae. Hindwing of a greyish brown. United States (Mt. Rainier, Wash.).
- subfuscula.* **L. subfuscula** *Grt.* (14 e) is similar to the preceding, but the maculae are situate in a not darkened cell; the forewing is violettish-grey, dusted with a blackish brown, with similar transverse lines, the distal line being double by dots on the veins behind it; a faded median shade is present; the undulate line consists of a row of intense brown sagittae. Hindwing greyish-brown with light fringes. Montana, Oregon, Colorado.
- sedilis.* **L. sedilis** *Smith* (14 e) resembles *subfuscula*, but it is easily discernible by the very intense median shade covering almost the whole discal area; the ring-macula is larger, white, surrounded with black. Utah and Colorado.
- conjugata.* **L. conjugata** *Smith* (14 e) has bluish-white forewings mixed with a blackish brown, very similar to *rainierii*, but the discal area is not darker than the other ground of the wing; the black transverse lines are strong, the posterior line dentate; the cell between the large grey maculae is darkened by black, the ring-macula is oblong, at both its ends pointed, above and below open; the undulate line is only marked by the marginal area behind it being darkened and by a dark costal spot before it. Hindwing of a greyish brown. Colorado.
- arietis.* **L. arietis** *Grt.* (14 e) is much lighter than the preceding, white, dusted with purple-brownish, and a yellowish basal ray; the black dentate transverse lines are on the averted sides edged with white; maculae of medium size, with brownish-grey pupils, with white rings and surrounded by black; the whitish faded undulate line is marked with small yellowish spots, with black dots on them; fringes speckled white and black. The white hindwing is dusted with brownish, with a dark median line distally bordered with a lighter colour. California.
- ochracea.* **L. ochracea** *Riley* (14 f) resembles *arietis*, but it differs by a brown dusted discal area on which the veins, the costal and proximal margins remain white, and by the large coniform macula in a whitish ring and encircled with black; the upper maculae are surrounded more with yellowish; also the marginal area behind the yellowish-spotted undulate line is dusted with brownish. California.
- comifera.* **L. comifera** *Dyar* differs from the other allied species of this genus by the eyes being only scantily covered with hair. Forewing grey with a bronze-yellowish tint; the blackish, broken, faded transverse lines are double, the posterior line filled up with a somewhat lighter colour; the coniform macula is a semicircle, the light upper maculae are surrounded with black, the reniform macula shaped like a star with five light-pupilled points; the undulate line consists of a row of small prominent spots being in front bordered with black; marginal area narrow yellowish. Hindwing whitish in the cell, behind it brownish-grey. Expanse of wings: 31 mm. Peru.
- perplexa.* **L. perplexa** *Sm.* (14 f). Forewing purple-grey, dusted with a blackish brown, with single black dentate transverse lines and distinct median shades, with maculae surrounded with black and with blackish pupils; the whitish undulate line shows proximally black diffuse sagittae. Hindwing brownish-grey. Canada and Colorado.
- alberta.* **L. alberta** *B. & Benj.* (14 a) is very much like *perplexa*, but distinguished from it by much more strongly serrate ♂ antennae with ciliary tufts. Forewing bluish-grey, very intensely strewn with black, marked the same as *perplexa*, the transverse lines and maculae distinctly bordered with a bluish grey and in bluish-grey rings, the reniform macula in the lower half pupilled black; the marginal area is mostly somewhat lighter than the other ground of the wing. Expanse of wings: 31 to 37 mm. Canada (Alberta).
- marloffii.* **L. marloffii** *Dyar.* Dark bluish-grey, scantily strewn with white; the anterior transverse line is indistinctly blackish with 2 larger bows, the distal line dentate, outside edged with a lighter grey, with white dots on the black median branches; the light large maculae are faintly bordered with dark, the ring-macula touches with a point the reniform macula distally; undulate line irregularly shaded. Hindwing dark, strewn with blackish, with a faint lighter median line and discal spot. Expanse of wings: 37 mm. Idaho, taken in June; it was described as an *Anytus*, but it belongs hereto.

11. Genus: **Polia** O.

This immensely large cosmopolitan genus is characterized by its scaled thorax with tufts, its tufted abdomen, smooth frons without any projections, its well developed proboscis, not ciliary eyes and unarmed anterior tibiae; chest and tibiae provided with long hair. The veins are not different from the normal Trifinoid type. Comp. Vol. III, p. 69, and Vol. XI, p. 70.

P. parvula H.-Schöff. (= distributa Mschlr.) (14 f) has the antennae provided with short pinnae, *parvula*, in the apical third being serrate, and light brownish forewings, dusted with red-brown, the darkest in the discal area, towards the base with a greenish tint; transverse lines single, black, the posterior line dentate, behind it with black streaks on the veins; the coniform macula is either surrounded with black or quite black and almost extends to the posterior transverse line; both the upper maculae are large, with reddish-brownish pupils and in lighter rings, the ring-maculae distally somewhat produced; undulate line whitish, proximally with reddish-brownish sagittae. Hindwing white, on the veins and margin brownish. The ♀ is more purple grey without the red-brown tints. Jamaica, Cuba, recently also reported from Florida. From the following it differs by the costal margin being postmedially more intensely shaded, whereby the median area appears to be more oblique.

P. centrochlora Dyar (14 f) is very similar, light sand-coloured grey, in the discal area dark olive, *centrochlora*, the deepest below the cell, with almost the same markings, the posterior transverse line forming a very acute angle above the cell, which almost touches the light, proximally darker shaded undulate line; marginal area tinted olive. Hindwing of a dingy white, at the margin broadly darkened. From Mexico (Misantla). The antennae are likewise provided with short pinnae.

P. subjecta Wkr. (= viriditincta Schs.) (14 f) has quite the same marking as *centrochlora*, but serrate *subjecta*, antennae, and it is 2 or 3 times as large; the ground-colour is in some places mixed with olive-green, behind the cell reddish-pink. From Cuba, Colombia, and Brazil.

P. lustralis Grt. (= cervina Sm.) (14 f, 20 a as *cervina*) has bluish-grey forewings dusted with red- *lustralis*, brown, with blackish transverse stripes being on the averted sides bordered with white, the posterior stripe dentate, the median line only traceable; maculae pupilled brown and encircled with white and a fine black, between and behind them the cell is filled with reddish; undulate line bluish-white, distally on the folds shaded with brownish. Hindwing brown, towards the base yellowish. Canada, Eastern States as far as Colorado. — The form *suffusa* Sm. is darker. *suffusa*.

P. naevia Sm. (14 g) is of a dingy grey, dusted with a blackish brown, with double transverse lines *naevia*, filled up with a lighter grey, and large maculae in whitish rings; the light undulate line is on both sides shaded with blackish; fringes speckled white. Hindwing brownish-grey with whitish fringes. Expanse of wings: 30 mm. Described from Colorado.

P. detracta Wkr. (= claviplena Grt.) (14 g) is similarly marked as the preceding, but more dark *detracta*, brown, dusted somewhat grey, with a black basal ray and a very characteristic coniform macula filled up with black; the upper maculae are grey, with brown pupils, the dentate transverse lines double, filled up with grey; undulate line grey, on each side bordered with black; in the marginal area blackish streaks on the veins. Hindwing blackish brown. From Canada through the United States to New Mexico. — **neoterica** Sm. (20 b) has the *neoterica*, coniform macula not filled up with black, and from it a bluish-white stripe extends to the undulate line. — The reddish-brown larva with fine light longitudinal lines presumably lives on low plants.

P. discalis Grt. (14 g) is a large, bluish-white species densely strewn with black, with single transverse *discalis*, stripes edged with white, the posterior stripe being dentate; the large maculae are situate in the darkened blackish cell; the undulate line is composed of small whitish lunae with dark sagittae in front of them. Hindwing white, towards the margin brownish. Canada to New Mexico. — The larva is of a dull brown with a yellowish white dorsal line in quadrangular dark dorsal spots. It lives polyphagous on low plants.

P. imbrifera Gn. (14 g) is on its grey ground dusted with brown and strewn with black, with black *imbrifera*, transverse stripes being partly double and bordered and filled up with a lighter colour; coniform macula and a dentate median line are present, the upper maculae large, with brownish pupils and surrounded with white; the space between the posterior transverse line and the undulate line is whitish, the latter line proximally accompanied by small blackish sagittae. Hindwing whitish, in the marginal area brownish. Canada and North-Eastern and Central States to Colorado.

P. leomegra Sm. is larger and darker than the very similar *imbrifera* (14 g) and of a much more *leomegra*, bluish-grey tint, all the markings rather indistinct, only the yellowish undulate line being conspicuous by its proximal black shading and forming above the anal angle a small though distinct W. Hindwing blackish with a narrow grey distal margin. Expanse of wings: 47 to 50 mm. From New Foundland, taken in August.

P. nugatis Sm. (14 h) has purple grey forewings dusted with a blackish brown, with yellowish-white *nugatis*, patches before the coniform macula and behind the reniform macula, and with a black basal ray; the transverse lines, particularly the posterior line are only partly present, the upper maculae are surrounded with black, and the reniform macula is on the median proximally extended to below the ring-macula; behind the lower cell-end

blackish darkening as far as the undulate line which is white and proximally spotted dark brown. Hindwing white with brown veins. Nebraska, Montana, Colorado. — **tufa** *Sm.* (14 h) is smaller, with narrower forewings, a much lighter bluish-grey ground-colour, the surroundings of the reniform macula particularly behind and below it suffused with a deep brown. From Utah.

languida.

P. languida *Sm.* (14 h). Forewing purple grey, strewn with blackish brown, darker in the costal area and in the cell, and behind it more red-brown; the anterior transverse lines are only marked at the costal margin, the posterior line is double, finely dentate; the upper maculae are large, light, encircled with black, the coniform macula is very small; the undulate line is yellowish white, proximally with black sagittae and a distinct W. Hindwing white with brownish veins and margin. Colorado.

purpurissata.

P. purpurissata *Grt.* (14 i) is a large, common species, with purple reddish grey forewings dusted with brown, in the cell and at the costal margin darker brown, with double dentate transverse lines filled up with a lighter grey, and with large maculae, behind the reniform macula it is dusted with red-brown; the light undulate line with a distinct W. Hindwing red-brown, towards the margin darker with white fringes. Canada and North-Eastern and Central States as far as New York and Utah. — In **juncimacula** *Sm.* (14 i) the reniform macula is on the median produced proximad, and the posterior transverse line is almost entirely absent. —

juncimacula.

crydina.
apurpura.

crydina *Dyar* is darker, particularly on the hindwing. From British Columbia. — f. **apurpura** *B. & McD.* (14 h) is very dark uniformly brownish grey with distinct, contrasting markings, behind the reniform macula tinted light ochreous, the undulate line proximally shaded with a velvety blackish-brown, with a very distinct W, the sides of which extend to the margin. From Arizona (White Mts.). — The monotonously dull brown larva without a recognizable marking lives polyphagous on low plants.

crotchii.

P. crotchii *Grt.* (14 g) has greyish-brown forewings with a black basal ray, extinct transverse lines and a very long and pointed coniform macula the lower border-line of which runs to the base of the proximal margin; the upper maculae are large, the reniform macula is on the median more or less united with the ring-macula; the undulate line is sharply dentate and proximally accompanied by black sagittae. Hindwing greyish-brown, towards the base lighter. — f. **fusculenta** *Smith* is a much darker form. Oregon, Colorado, and California.

fusculenta.
oriza.

P. oriza *Drc.* (14 i) has whitish forewings dusted with red-brown, with a darker discal area; the double transverse lines filled up with white are united above the proximal margin, behind the distal line there is white dusting; both the upper maculae are pupilled red-brown, above open and in the lower half of the cell connected by a white stripe. Marginal area more purple grey. Hindwing white, the costal margin and marginal area brownish-red. From Mexico.

rubens.

P. rubens *Drc.* (14 i) is very similar, more purple brown, dusted with grey, with a black-filled cell, with a black triangle outside on the reniform macula; the latter is on the median proximally produced; the transverse lines are not united at the proximal margin; coniform macula large, almost quite black. Hindwing whitish, at the costal and distal margins slightly brownish. Mexico, common.

lepidula.

P. lepidula *Sm.* (= *perta* *Drc.*) (14 h) has bright ferruginous-brown and chestnut-red forewings, in the discal and marginal areas darker brown except the submedian space between the median and the fold; transverse lines single, on the averted sides edged with grey; the maculae are whitish grey, the reniform macula on the median not prolonged, in the lower half pupilled dark brown; the marginal area behind the whitish undulate line is dark brown. Hindwing light reddish-brown, with yellowish-white fringes. Texas, California, Mexico.

griseata.

P. griseata *Sm.* (14 k). Forewing purple grey, strewn with a brownish grey, browner in the discal area, in the distal half of the postmedian area and in the marginal area except the apex, with a black basal ray; the anterior transverse line is of a plain grey, the posterior line double, filled up with grey, the undulate line white, on both sides shaded with dark, the maculae are small, in grey rings. Hindwing brownish-grey, towards the base lighter. Colorado.

determinata.

P. determinata *Sm.* (14 k) has ochreous-yellowish white forewings dusted with red-brown, in the discal and marginal areas the darkest, here as well as on the median and in the distal part of the costal-marginal area strewn with white; the indistinct transverse lines are single, the posterior line dentate; the maculae are pupilled red-brown, the reniform macula towards the base excavated. Hindwing reddish-brown, towards the base lighter. Colorado.

distincta.

P. distincta *Hbn.* (= *vitis* *French*) (14 i, k) is on the forewing greyish-white, strewn with a light brown, with double transverse stripes filled up with white, with a short, broad coniform macula, the apex of which is united with the distal transverse line; the large, grey maculae, tinted reddish-brown, are situate in the dusted brown cell; the undulate line is irregularly dentate, with small black sagittae in front of it and olive dusting behind it in the centre. Hindwing white, on the margin and veins brown. Canada, Eastern and Central States to Colorado.

columbia.

P. columbia *Sm.* (14 k) is of a bright red-brown, strewn with grey, with brownish-striped veins and rather indistinct transverse lines; the grey maculae are surrounded with red-brown, the reniform macula below pupilled greyish-brown, between them a red-brown median shade; the undulate line is only defined by the greyer marginal area behind it. Canada (Alberta, British Columbia).

leucogramma.

P. leucogramma *Grt.* (14 k) is on the forewing reddish-brown, strewn with black, with double transverse lines filled up with a greyish white, and a black median shade between the small, grey-pupilled maculae; undulate

line white, proximally with black sagittae; behind it the marginal area is dusted with white. Hindwing brown, towards the margin darker with white fringes. California.

P. meditata *Grt.* (14 k) is similar to *leucogramma*, larger, more monotonously brown, with much less contrasting transverse lines and without the black median shade; the marginal area behind the undulate line is darker, dusted with grey, with darker veins. Hindwing darker brown. Canada, Eastern States as far as Virginia and Mississippi, Kansas. — The larva is of a dirty reddish-brown with roundish, darker dorsal spots in a lighter ground. It lives polyphagous.

P. brachiolum *Harv.* (15 a) has more grey forewings dusted with a blackish brown, with double dentate transverse stripes filled up with grey, and small maculae surrounded by black; the postmedian area is grey like the undulate line which is marked black on both sides. Hindwing brownish-grey, towards the base lighter. Texas, Arizona.

P. mohosa *Dogn.* (15 a) is a very small species with whitish forewings suffused with red-brown and blackish-brown, with double anterior and single dentate posterior transverse lines, the latter distally bordered with white. Maculae in white rings, pupilled red-brown, the reniform macula in the centre white, on the median prolonged proximad; undulate line white, the marginal area behind it greyish-brown. Ecuador (Loja).

P. orizabena *Schs.* (15 b) is on the forewing blackish-brown, tinted purple reddish and with a grey reflection; the indistinct double transverse lines are filled up with a somewhat lighter reddish colour, the median area between them is darker; maculae small, the ring-macula grey, the reniform macula in a reddish-pink ring with a white spot at the distal edge; the undulate line is composed of white dots on black longitudinal streaks. Hindwing yellowish-brown. Mexico (Orizaba).

P. rubrifusa *Hmps.* (15 a) is dark grey, strewn with black, with a slight purple tint, the subbasal and postmedian areas being reddish, both the folds in the discal area deep red; anterior transverse line double, the posterior line single, dentate, distally marked whitish; the maculae are small, reddish, in white rings; the undulate line is reddish, proximally with small brown sagittae, distally shaded dark. Hindwing light brown, towards the margin darker. New Mexico.

P. umbrosa *Sm.* (15 b) is somewhat like *rubrifusa*, more grey, dusted with dark brown, with a darker discal area, the transverse lines as in *rubrifusa*; the reniform macula is on the median somewhat proximally produced, before and behind it reddish dusting; an undulate, darker median line is traceable; undulate line white, proximally scarcely darker; hindwing brownish-grey, veins and margin darker. From Colorado and Arizona.

P. hanhami *B. & McD.* (14 k) has light brown forewings strewn with blackish, with rather indistinct markings, the anterior transverse lines double, the posterior line single, behind it a row of black dots on the veins; between the small, dark encircled maculae a dark median shade extends, being enlarged into a round dark spot below the reniform macula from where it extends undulate to the proximal margin; behind the undulate line the marginal area is darkened. Hindwing smoky grey with a dark discal spot. Vancouver. — **semicarnea** *B. & McD.* (15 a) is the form occurring in Central and South California, in which the ground-colour is a light flesh-coloured red, whilst the black dusting in the discal and marginal areas is reduced.

P. gnata *Grt.* (15 a). Forewing dark grey, dusted with yellowish-brown, with double transverse lines, both only undulate, not dentate; the small coniform macula is encircled with black, the upper maculae of medium size, in whitish rings and surrounded with black, the ring-macula obliquely elliptical; from the cell-end a slight median shade extends to the proximal margin; behind the postmedian line there is a large light spot at the proximal margin; the undulate line is light, on the discal and submedian folds bent proximad, the marginal area behind it darkened. Hindwing white with brownish veins and margin. New Mexico, Arizona.

P. surgens *Dyar* (15 a) seems to approximate *gnata*; forewing much narrower and greyer, only in the discal and subterminal areas dusted with brownish, behind the subbasal transverse line at the proximal margin a blackish shade, both the middle ones approaching each other at the proximal margin, finely dentate; above the anal angle a large, oval, yellowish spot; the coniform macula is a black spot, the upper maculae are yellowish-brown, in lighter rings; the undulate line forms two proximally directed bows which are distally edged with black, proximally accompanied by 3 small sagittae; marginal area dusted more with grey. Hindwing whitish, at the margin brownish, in the ♀ entirely darkened. Mexico (City).

P. mülleri *sp. n.* (15 b) is allied to *surgens*, larger, with broader wings and with the same serrate antennae in the male, the greyish-white ground densely dusted with brown and strewn with black, postmedianly on both folds brightened up with ochreous-reddish, with black double transverse lines, the anterior line filled up with a lighter grey and submedianly forming a large bow projecting towards the margin, the posterior line much more indistinct, subanally behind it a large, oval, light spot, the upper distal bordering of which terminates as an oblique yellowish-white streak into the anal angle; the coniform macula is a small black spot, the upper maculae are filled up with a yellowish brown, in whitish rings and surrounded with black, the ring-macula obliquely elliptical, the reniform macula proximally concave, on the median pointedly extended proximad; the undulate line forms two similar, though more shallow bows than in *surgens*, behind it white strewing, the most intensely subapically, the upper bow being there bordered with black in the lower half; fringes brown speckled with ochreous whitish. Hindwing in both sexes of a dark brownish grey, fringes in the distal halves

white. Both sexes in numbers received from Mexico (Zacualpan), taken in May.

selama. **P. selama** *Streck.* has blackish-brown, silky lustrous forewings strewn with grey, with black transverse stripes bordered with grey; coniform macula absent; marginal area grey with an indistinct black marginal line. Hindwing brownish-grey, towards the base lighter with whitish fringes parted by dark. Expanse of wings: 28 mm. Texas.

insolens. **P. insolens** *Grt.* (= *carina* *Morr.*) (15 d). Forewing whitish or yellowish-white, densely dusted and strewn with a dark brown, with single blackish transverse lines, the posterior line dentate; coniform macula marked with brown, the upper maculae large, surrounded with whitish or yellowish; the uniformly bent undulate line is proximally bordered by small blackish-brown sagittae, behind it the marginal area is darkened. Hindwing whitish, dusted with brown. From California (San Francisco).

plicata. **P. plicata** *Sm.* (15 a) has grey forewings densely strewn with blackish-brown, the cell and disc dusted with red-brown, with somewhat darker striped veins; transverse lines double, filled up with grey, before the posterior lines traces of an undulate median line; coniform macula grey, surrounded with brown, the upper maculae grey, surrounded with black, the reniform macula below pupilled dark; the undulate line is whitish, the hindwing greyish-brown. Canada and Colorado.

negussa. **P. negussa** *Sm.* (15 b) is smaller, of a lighter grey, only in the marginal area except the apex much darker, with a very distinct median line which is almost rectangularly broken at the lower cell-end, the reniform macula being larger, more strongly angled, with postmedian black, white-dotted streaks on the veins; before the distinct light undulate line at the costal margin a more darkened area. The hindwing is of a darker greyish-brown. Saskatchewan.

tristis. **P. tristis** *B. & McD.* (15 e). Forewing deep purple grey, in the discal area shaded with brown, with a black, above ochreous yellowish basal ray; the black transverse lines are close together at the proximal margin and above it connected by a black streak above which there is brown colouring; maculae grey, surrounded with black, behind the reniform macula a purely brown area; undulate line white, interrupted, above the anal angle a spot scaled grey and yellowish, above it a black streak; fringes speckled dark. Hindwing smoky grey with a darker margin. Arizona.

purpurea. **P. purpurea** *B. & McD.* (15 c) is somewhat similar to *tristis*, larger; the discal and subterminal areas are less brown than lighter reddish; the maculae are much more intensely surrounded with black, chiefly on the proximal sides, between them the cell is darkened with purple, behind the reniform macula there is a reddish tint; there is no streak connecting the transverse lines; undulate line very distinct, proximally bordered with a blackish brown. Hindwing smoky grey. Arizona.²

grandis. **P. grandis** *Bsd.* (= *libera* *Wkr.*) (15 b) is still somewhat larger than *purpurea*, on the purple grey forewing more intensely dusted with red-brown, with a black basal ray, and a black stripe from the end of the short, broad coniform macula to the postmedian line behind which the subterminal area is dusted with a lighter lilac grey; the white undulate line with a distinct W is proximally bordered with red-brown and with small black sagittae, the marginal area behind it dusted almost with black. Hindwing yellowish brownish-grey. A common species from Greenland through Canada to Colorado. — The greyish-brown larva without distinct markings lives polyphagous on the ground on all kinds of low plants.

subjuncta. **P. subjuncta** *Grt. & Rüb.* (15 e) is on an average somewhat smaller with narrower wings, very similarly marked as *grandis*, still more dusted with red-brown, particularly behind the reniform macula as far as the apex; the coniform macula is larger, the subterminal area not lilac-grey but brownish-red, the hindwing much lighter whitish, tinted brownish, on the veins and margin more intensely brownish. Canada to New Mexico. — The greenish larva is watered with brown and shows oblique dark subdorsal shades and a broad

eleanora. reddish lateral band being upwards bordered with yellow; it lives on low plants. — **eleanora** *B. & McD.* (15 d) from South California is much lighter, greyer, without reddish-brown tints, only above the basal ray and behind the coniform macula somewhat brownish.

nevadae. **P. nevadae** *Grt.* (15 c). Forewing dark reddish-brown, at the costal and proximal margins strewn with white, at the base of the costal margin as far as the black basal ray yellowish-white; the transverse lines are rather indistinct, on the averted sides bordered with whitish, the undulate line white with a distinct W; the coniform macula is small, the upper maculae are whitish, the reniform macula crossing the cell below, here pupilled blackish. Hindwing brownish-grey with whitish fringes. Canada to California. — The larva is dark brown with a broad dark dorsal band and connected with it there are oblique subdorsal shades, as well as a broad, white lateral band dusted with reddish. — **canadensis** *Sm.* is much greyer, almost without any reddish tints, with a still less distinct marking. From Canada.

ingravis. **P. ingravis** *Sm.* (15 d) is likewise very similarly marked as the preceding, the ground-colour is brownish-grey, dusted with purple grey, with a black basal ray, a large, grey coniform macula being surrounded with black; the upper maculae are large, in whitish rings and surrounded with black, between them a faded dark median line; the subterminal area as far as the white undulate line with a distinct W is purple grey, behind it darkened. Hindwing blackish brown, at the margin blackish with reddish fringes. From Canada (Calgary, British Columbia).

P. obesula Sm. (15 c) is on its yellowish-grey ground dusted with reddish-grey and brown, with double blackish transverse lines filled up with a lighter colour, a narrow dark median shade, a large, broad, dark coniform macula surrounded with black, and dark-pupilled, light-ringed upper maculae; the undulate line is light with a distinct W, before it black sagittae. Hindwing light yellowish with a broad blackish marginal band and discal luna. Expanse of wings: 30 to 34 mm. Canada, Colorado. — **ortruda** Sm. exhibits a more uniformly reddish-yellow ground-colour with somewhat more coherent, more distinct markings and a ferruginous-yellowish abdomen. From Colorado. obesula.
ortruda.

P. passa Morr. has light ochreous forewings dusted with red-brown and strewn with blackish, with a black basal ray, with indistinct double transverse lines, the subterminal area strewn with whitish; the coniform macula is large, surrounded with black, the upper maculae large, light, surrounded with black, the ring-macula obliquely elliptical, above open, behind the reniform macula reddish dusting; the undulate line is very uniform, white, proximally marked blackish-brown. Hindwing brownish-grey. Expanse of wings: 34 mm. California. passa.

P. vau-orbicularis Sm. Forewing ochreous-grey, dusted and strewn with a blackish brown, with double indistinct transverse lines, behind the postmedian line yellowish dots on the veins; the coniform macula is absent, the upper maculae are small, the ring-macula V-shaped, bordered with jet-black, with a broad faded median shade; the yellowish undulate line is proximally defined by black spots. Hindwing brownish-grey, towards the base lighter. Expanse of wings: 35 mm. Oregon. vau-orbicularis.

P. pyrosoma Hmps. (15 e). Forewing deep chestnut, dusted with a blackish brown, the veins blackish-brown striped with lustrous leaden grey; the single black transverse lines are on the averted sides bordered with leaden grey; the coniform macula is finely encircled with black and exhibits a yellow wedge-shaped spot behind it; the upper maculae are leaden-grey, red-striped in the centre, the reniform macula on the median long proximally produced; the undulate line is composed of yellow internerval streaks, behind it a black and analwards a yellow oblique stripe; fringes at the base red. Hindwing reddish brownish-grey. The abdomen is fiery red, at the base whitish. Peru, Colombia. pyrosoma.

P. ardelio sp. n. (15 e) resembles *pyrosoma*, it is smaller, much darker, more purple black, intermixed with carmine and bluish-violet scales, otherwise very similarly marked; the maculae are much darker purple brown, only very narrowly bordered with whitish; the white hook-shaped spot behind the coniform macula has changed into a narrow, oblique, white line extending towards the anal angle; the veins in the marginal area are not so broadly light-striped; the undulate line consists of jet-black, white-pupilled sagittae. Hindwing much lighter, whitish, in the disc diaphanous. Described according to 1 ♀ from Bolivia (Cuesta de Cillutincara). ardelio.

P. invalida Sm. (15 e) is on the greyish-white forewing dusted and strewn with blackish-brown, with a black basal ray and double transverse lines as well as a faded median line; the coniform macula is uncommonly large and broad, from its apex a black streak extends to the posterior transverse line behind which there is a whitish spot towards the proximal margin; the upper maculae are large, in white rings and encircled with black; the white undulate line with a distinct W is proximally defined by long black sagittae, and there are also distally black internerval streaks. Hindwing dusted with brown. From Oregon, Colorado, and California. — The red-brown pupa with whitish longitudinal stripes and oblique blackish-brown subdorsal shades lives polyphagous. invalida.

P. cristifera Wkr. (= *impolita* Morr.) (15 e) resembles *invalida*; the purple grey forewing is dusted with black and strewn with white particularly at the costal margin, with double transverse lines filled up with grey and a grey spot behind the posterior line near the proximal margin; the maculae are pupilled dark and in grey rings, between them an undulate median line; the undulate line consists of small white lunae, proximally accompanied by black sagittae. Hindwing ochreous-brownish. Canada, United States. cristifera.

P. lubens Grt. (= *rufula* Morr.) resembles *cristifera*, but in the antemedian area it is dusted with red-brown, the reniform macula is in a ring of pure white, the subterminal area is of a purer grey, the undulate line coherent and proximally shaded with red-brown. From New York, Washington, Colorado. — f. **glaucopis** Hmps. (15 d) has the reniform macula in a yellowish ring. Canada (Vancouver). lubens.
glaucopis.

P. caloscotina Dyar (15 e). Forewing very broad, lilac-grey, dusted with brownish and strewn with black, with double transverse lines and rather large maculae, surrounded with black and pupilled darker; the reniform macula is tinted reddish with a fine dark central streak and is very obliquely situate and becomes more prominent owing to a dark median shade proceeding from the costal margin and being closely adjoining to its proximal margin; the proximal half of the basal area is darkened; the undulate line is close to the margin, very indistinct and composed of roundish, brown, small spots in lighter rings. Marginal area darkened with black streaks on the veins and a more intense stripe on the submedian fold. Hindwing brownish-grey. Mexico. caloscotina.

P. latex Gn. (= *demissa* Wkr.) (15 f) has greyish-white forewings strewn with brown and black, with darker veins and a blackish costal-marginal spot near the base, indistinctly double black transverse lines and large maculae surrounded with black, the reniform macula with a bright ferruginous red pupil; behind it brown dusting; the marginal area behind the undulate line is darkened with black strigiform spots above latex.

the radial branches and above the inner-marginal vein. Hindwing dusted with brown. Canada, Northern and Eastern States. — The brown larva with dark subdorsal lines and lateral lines presumably lives polyphagous on low plants.

- nimbosa*. **P. nimbosa** Gn. (15 d) resembles the European *nebulosa* (Vol. III, t. 19 c, d); forewing whitish, strewn with brown and black, in the costal area and cell darker, with dentate, white-edged transverse stripes, large maculae surrounded with black, with a darker brown pupil and a whitish undulate line which is proximally bordered with black. Hindwing brownish with a darker transverse line which is behind it bordered with a lighter colour. Canada, North-Eastern and Central States, Colorado.
- rogenhoferi*. **P. rogenhoferi** Mschl. (15 f) is smaller, more brownish, with more distinct double transverse lines filled up with a purer white, with a thick black median shade between the large, white, brown-pupilled maculae; behind the postmedian line black and white dots on the veins; the undulate line consists of a row of white moon-spots, with a faded darker subterminal band. Canada (Labrador, Manitoba).
- carbonifera*. **P. carbonifera** Hmps. is closely allied to *mystica* (15 f). Forewing brownish-black, strewn with grey, the transverse stripes fine black, indistinct, the distal one towards the costal margin posteriorly dusted with white; the small coniform macula is surrounded with black, the upper maculae dusted and ringed with whitish and surrounded with black; the whitish scaled undulate line is proximally bordered by black lunae, the fringes are crossed by white. Hindwings brownish-black with whitish fringes. Expanse of wings: 50 mm. Canada (Alberta).
- mystica*. **P. mystica** Sm. (15 f) has the forewing much more densely dusted with blackish-brown, the marking is very similar to that of *rogenhoferi*, but the transverse lines are single, the posterior line distally edged with grey; the ring-macula is obliquely elliptical, the reniform macula centrally strangulated, both large, surrounded with black; the whitish undulate line is proximally at the costal margin and on the folds bordered with black sagittae. Hindwing yellowish greyish-brown with a dark median band and margin. Canada.
- adjuncta*. **P. adjuncta** Bsd. (15 f) is very easily recognized by the intense white admixture on its olive-grey ground which is dusted with black, particularly the reniform macula being prominently white. Hindwing yellowish-white, at the margin brownish. Canada and United States. — Larva olive-green with lighter dorsal and subdorsal lines, and dark green oblique spots on the 5th, 6th and 12th rings, on the others only traces of them.
- brenda*. **P. brenda** B. & McD. (15 f). Forewing light grey, dusted with a smoky brown colour, with a short black basal ray and double transverse lines, large, white maculae surrounded with black, the reniform macula pupilled brownish; from the very broad coniform macula a black streak runs to the postmedian line, behind it with a yellowish tinge; the undulate line is light yellow with an indistinct W, before it black bows, and above and below the W black small spots. Hindwing smoke-coloured grey. Utah, in May.
- dilatata*. **P. dilatata** Sm. (15 g) has white forewings strewn with blackish-brown, olive, yellowish and black, the costal half of the basal area being white, below it grey, with double black transverse lines filled up with white; median shade only visible at the costal margin and proximal margin; maculae white, surrounded with black, the reniform macula with a grey pupil; the white irregular undulate line is interrupted, proximally bordered by a dark costal-marginal spot, in the centre by sagittae; marginal area brownish-grey. Hindwing brownish-grey, towards the base lighter. New Mexico.
- variolata*. **P. variolata** Sm. (15 g) is very much like *dilatata*. Grey, mixed with ochreous-yellow and olive-brown, with double transverse lines filled up with white, large white maculae and a white spot behind the coniform macula; all the rest as in *dilatata*. From Washington.
- glaciata*. **P. glaciata** Grt. (15 g) entirely resembles *variolata*, but the white upper maculae are pupilled brown, the ring-macula is elliptical, behind it there is a distinct undulate median shade. Arizona.
- pennitarsis*. **P. pennitarsis** Wkr. (= *ehloodes* Zerny) (15 g) is in the ♂ very well distinguished by long hair-tufts on the legs. Forewing brown mixed with green, with double transverse lines filled up with green, the maculae in green rings, and a green undulate line proximally shaded with dark brown; the coniform macula is very conspicuous as a quadrangular, dark brown spot surrounded with black. Hindwing brownish white, distally red-brown. From Colombia (Pacho), Brazil (Rio de Janeiro, Sa. Cruz).
- plumipes*. **P. plumipes** Hmps. Forewing of a bright red-brown, strewn with black, with double black transverse lines; the upper maculae are small, the ring-macula obliquely elliptical, in a whitish ring and surrounded with black, the reniform macula towards the base concave, above and below open, on both sides bordered with white between black lines, the white forming on the distal side a small triangle; the marginal area behind the light undulate line is darker. Hindwing reddish-brown with white fringes. Expanse of wings: 28 mm. Described from Costa Rica.
- chunka*. **P. chunka** Sm. somewhat resembles *farnhami* (15 h) and has smoke-coloured brown forewings with a blackish spot in the proximal half of the basal area, below bordered by a short black streak; transverse lines double, the proximal lines black, the distal lines brown; the coniform macula is large, pointed, often filled up with a darker colour, the ring-macula is small and narrow, bordered with light, the reniform macula large, crossing the cell-angle below and pupilled dark below. Subterminal area grey with darker veins and with 2 large and several small black sagittae bordering proximally on the yellowish undulate line. Hindwing brownish-grey with a broad dark marginal band, veins and discal luna. Expanse of wings: 34 mm. Canada (Manitoba).

P. farnhami Grt. (15 h). Purple-grey, in the disc browner, with darker veins, double transverse stripes *farnhami*, filled up with a lighter brown, and a dentate median line; the coniform macula is large, encircled with black, the upper maculae are small, with reddish pupils, the reniform macula with a whitish line proximally, before the ring-macula a small white spot; undulate line whitish with a distinct W and black sagittae proximally, the apex is parted by a whitish patch; marginal area brown. Hindwing brownish with darkened veins and margin. Canada, Colorado.

P. prodeniformis Sm. (15 g) is similarly marked as *farnhami*, but easily discernible above all by the *prodeniformis*, light splinter-like spot extending above the long coniform macula to the postmedian line; the veins, the costal area and the proximal half of the postmedian area obliquely extending to the apex dusted with a greyish white; the undulate line is yellowish-white with a long, pointed W. Hindwing whitish with a broad brownish-grey marginal band. From New Mexico in the United States to Mexico.

P. liquida Grt. (15 h) resembles *prodeniformis*, but it is much larger, more bluish-grey, only in the discal *liquida*, area brownish, the double transverse lines filled up with a light bluish grey, the light splinter-spot is mostly only a narrow grey streak on the lower median branch. Hindwing more extensively dark with a whitish postmedian band. Washington, Oregon, Colorado.

P. meodana Sm. (15 h) is very similar to *liquida*, but the wings are broader, less pointed, the marking *meodana*, is the same, but it is of a much more uniform appearance and not so contrasting on a light bluish-grey ground dusted with reddish-brown; the narrow double transverse lines are filled up with white; the proximal-marginal vein and the lower median branch are decidedly dusted with white, the others only traceably so. Hindwing yellowish brownish-grey with a darker distal margin. Expanse of wings: 32 to 38 mm. Canada, Washington, Wyoming, Colorado.

P. tacoma Streck. (15 h) is much more variegated than the preceding, in the basal and subterminal *tacoma*, areas violettish-grey, in the discal area reddish-brown, the reniform macula pupilled ferruginous-brown, the cell before and between the maculae filled up with black, similar to the angles of the median branches; the filling of the transverse veins, the ring-macula and a costal spot above it are grey; undulate line white, on both sides shaded with reddish-brown. Hindwing brownish-yellow, darkened at the margin, only near the anal angle narrowly whitish. Canada; Washington. — The larva is light green with lighter, yellowish longitudinal lines being bordered with dark; it lives on *Rubus* and low plants.

P. atlantica Grt. (= *discolor* Speyer) (15 i). Greyish-brown, except the costal-marginal area suffused *atlantica*, with red-brown, with a black basal ray and plain transverse stripes bordered with grey, as well as a yellowish-white, sharply dentate undulate line with a W extending to the margin; the coniform macula is dark brown, encircled with black, the upper maculae in grey rings, below the reniform macula black shading; the narrow marginal area behind the undulate line is very dark. Hindwing brownish, towards the margin darker. Canada; Eastern States to Virginia. This species is better ranged more in front between *subjunctae* and *nevadae*.

P. quadrata Sm. (15 g). Dark red-brown, strewn with a lighter colour, in the subterminal area lighter, *quadrata*, more reddish; transverse lines single, bordered with whitish, behind the distal line black, white-dotted streaks on the veins; the maculae are scarcely lighter than the ground, encircled with dark; before the light undulate line with a distinct W black sagittae. Hindwing reddish greyish-brown with light fringes. California. — The larva is marbled darker on a yellowish-brown ground, with darker dentate dorsal ornaments and somewhat lighter longitudinal lines. Presumably polyphagous.

P. radix Wkr. (= *dimmocki* Grt., *desperata* Sm.) (15 i) has deep red-brown forewings dusted with *radix*, grey, with a black basal ray, double transverse lines filled up with grey, and large maculae encircled with black; there is also a black median line; the whitish undulate line provided with a distinct W shows proximally small red-brown sagittae. Hindwing brownish-grey with whitish fringes. Canada to California. — The greyish-brown larva has oblique dark subdorsal spots and light yellowish dorsal and subdorsal lines. It lives polyphagous on many low plants.

P. congener Hmps. has grey forewings in some places dusted with brown and strewn with black, *congener*, with double black transverse lines filled up with white, the coniform macula encircled with black, the upper maculae in white rings and encircled with black and between them with an indistinct black median line; the undulate line consists of a bent row of small white spots on black diffuse patches which are distally bent at the anal angle. Hindwing white with a brownish basal area, veins and proximal margin, whilst the distal margin is brown. A most variable species. — In the form **aurantitincta** nom. nov. (= ab. 1 Hmps.) the proximal half *aurantitincta*, of the basal area and the space before the undulate line is strewn with orange, in **albimacula** nom. nov. (= ab. 2 Hmps.) the two upper maculae are all white, like the postmedian area. Expanse of wings: 34 to 38 mm. — *albimacula*, South-Eastern Peru.

P. albitela Drc. Forewing dark red-brown, towards the base yellowish; at the cell-end a large V-shaped, *albitela*, yellowish-brown spot, subterminally a broken band of similarly coloured spots; on the margin there is a row of small, indistinct grey spots, behind the coniform macula a hook-shaped, large, white spot not reaching to the proximal margin. Hindwing dirty white, with a broad smoky margin. Expanse of wings: 38 mm. Peru.

P. erythurus Drc. Forewing dark brown, the upper maculae very indistinct; the posterior transverse *erythurus*, line consists of small black dots on the veins; behind the coniform macula a hook-shaped yellow spot; the

undulate line consists of very small yellow spots. Hindwing white, at the distal margin brown, in the ♀ entirely brown. Expanse of wings: 38 mm. North East Peru. Allied with *imitata* Maassen (15 h).

imitata. **P. imitata** Mssn. (15 h). Forewing greenish-brown or violettish-brown, dusted and strewn with blackish-brown, in the antemedian and subterminal areas as well as in the fillings of the maculae olive-green; the transverse lines rather indistinct, the anterior line submedianly bordering round a blackish oval and at the proximal margin of a purer white; behind the coniform macula a white hook-shaped spot, the upper maculae broadly confluent on the median; undulate line interrupted white, in the centre forming a W, behind it the marginal area is purple blackish. Hindwing yellowish-white, at the margin broadly darkened. Ecuador, Colombia.

umbrata. **P. umbrata** Schs. Forewing greyish-brown, dusted with lilac, the costal margin and basal half of the cell pale reddish-yellow, below it a black basal ray; the base of the proximal margin is dusted with a brownish black; transverse lines double, behind the distal line the veins are black, strewn with reddish-yellow; the large reniform macula is reddish-yellow, encircled with black, below the cell with a bent black line; the reniform macula is likewise large, brown, in a reddish-yellow ring, before and behind it dark brown shading; from the posterior transverse line there extends behind the cell a broad blackish-brown nebulous stripe to the margin, interrupted by reddish-yellow spots of the undulate line; a similar shade is above the anal angle; in the marginal area between the veins blackish-brown stripes. Hindwing blackish-brown. Expanse of wings: 35 mm. Costa-Rica.

albimixta. **P. albimixta** Schs. has lilac-brown forewings, the costal base and the cell being yellowish-green with a black basal ray; the fine transverse lines are black, bordered with white, before and behind it black and white strewing on the veins; the upper maculae are yellowish-green, in broad white rings, both in the centre strangulated, the ring-macula oblique, its white margin flows together with a white line partly bordering round a yellowish-green spot below the cell; the proximal margin in the discal area is white, strewn with a yellowish green, the costal margin is spotted white; the marginal area is broad white, strewn with green, behind the cell interrupted by a brown shade. Hindwing blackish-brown. Expanse of wings: 34 mm. Costa-Rica.

sutrina. **P. sutrina** Grt. (15 i) is dusted and strewn with dark brown on a bluish-white ground, in the discal area darker, with a long black interrupted basal ray as far as the postmedian; the dentate transverse lines are on the averted sides white, the maculae are large, with brown pupils and white rings; the whitish undulate line without a distinct W has black sagittae in front of it. Hindwing brownish-grey with grey fringes. Canada; Colorado.

gasiva. **P. gasiva** Schs. (15 i). Forewing grey, intensely strewn with dark brown and in some places, particularly much in the discal area, dusted with blackish-brown; the black transverse lines are single, the posterior line dentate; the small coniform macula and the grey upper maculae are encircled with black, between them there runs down a faded dark median shade; the grey undulate line is on each side shaded with dark brown the veins in the marginal area are striped black. Hindwing dusted with brown, with white fringes. A small species from Mexico.

paranica. **P. paranica** Schs. (15 k) has violettish-grey forewings dusted and strewn with black, in the subbasal area, discal area and before the undulate line olive-green; the transverse lines are black, on the averted sides bordered with white, on the submedian fold connected by a black streak; the maculae are filled up with olive-green, in white rings and encircled with black, between them an indistinct undulate median line; the undulate line is prominently white, behind it green spots and black on the folds. Hindwing yellowish with darkened margins. Brazil. An extremely variable species. Intensely white specimens that almost look like a different species but which are connected by transitions, I denominate **albescens** form. nov. (15 i).

cuneata. **P. cuneata** Grt. (15 i). Forewing grey, dusted with blackish-brown, with a darker discal area, with double transverse lines filled up with grey, the posterior line dentate and behind it on the veins striped grey and black; maculae in grey rings; undulate line white, proximally with black and yellow sagittae, the marginal area behind it darker. Hindwing brownish-grey. Canada, United States to California. — **gertana** Sm. is smaller, more slender, both the transverse lines connected by the coniform macula. — **basirufa** Strd. (= ab. 1 *Hmps.*) has the basal area dusted with reddish-brown, the maculae and subterminal area whiter. — **rubicunda** Strd. (= ab. 2 *Hmps.*): the reddish-brownish dusting is extended across the whole wing; the two latter forms are uncertain and may belong to other species.

legitima. **P. legitima** Grt. (15 k) resembles the reddish forms of the preceding, but it has a broader shape of the wings; the transverse lines have the same shape, but the intense white edging is absent; there is an undulate median line; the coniform macula is often entirely filled with black, the upper maculae are grey, the reniform macula is red-brown, in the lower half pupilled blackish-grey and in a light ring; the grey undulate line is proximally shaded with red-brown, the marginal area behind it darkened. Hindwing light brownish with a dark margin. Canada; United States to Oregon. — The larva is violettish-brown with light yellow longitudinal lines which are partly above bordered with black.

dodi. **P. dodi** Sm. (15 k) is smaller and darker than *legitima*, with a dark bluish-grey ground-colour, in the basal, costal and cellular areas dusted with red-brown; the transverse lines are the same, filled up with a lighter grey, the ring-macula is smaller, narrow and oblique. The hindwing is somewhat darker. From Canada (Alberta).

P. lilacina Harv. (= *illabefacta* Morr.) (15 k) has purple grey forewings dusted with brown and strewn *lilacina*. with a darker colour, with double transverse lines filled up with grey, a rather large coniform macula encircled with black and large upper maculae in grey rings and pupilled dark, with an indistinct dark median line between them; the grey undulate line is proximally bordered with red-brown; hindwing light brown, at the margin darker. Canada to Colorado. — **luski** B. & McD. is browner, the maculae above open, the median line more *luski*. distinct, the veins in the discal area strewn with white; behind the purple grey subterminal area the yellow undulate line is distinctly visible. Described from Arizona.

P. gavisia Schs. (16 a). Forewing dark brown, dusted with grey and purple red with a black basal *gavisia*. ray, double transverse lines filled up with grey, with short black streaks on the veins behind the distal line; the undulate line consists of small black and grey sagittae, proximally bordered with red-brown; the maculae are encircled with black, the reniform macula proximally concave with a white line at the distal edge. Hindwing brownish-black, towards the base lighter. From Mexico.

P. tolimae Zerny (15 k). Forewing copper-reddish brown strewn with a black lead-colour, at the *tolimae*. costal margin and in the marginal area dusted with black, with double transverse stripes filled up with a somewhat lighter colour, large maculae surrounded with black, the ring-macula above open, towards the margin pointed, coloured like the ground, the reniform macula white, proximally with a black transverse streak; the coniform macula is also rather large, encircled with black; undulate line composed of very small ochreous-yellowish lunae, on the discal fold proximally bent with some small, rather long sagittae before it. — In *dealbata* *dealbata*. form. nov. (16 a) the reniform macula is not white. Colombia (Mt. Tolima).

P. opinabilis sp. nov. (16 a) is allied to *tolimae*. The ground-colour is a light yellowish-brown with ferru- *opinabilis*. ginous brown markings arranged like in *tolimae*, but the ring-macula is quite round, the discal area particularly at the proximal margin somewhat darkened with brown, and marked with a dark red-brown, broad median line; the undulate line like in *tolimae*, but without the sagittae above and below the discal fold; in the subterminal area there are black double dots on the veins. Hindwing yellowish-brown with more reddish fringes and a darkened marginal area, discal spot and postmedian line. Bolivia (Cuesta de Cillutincara).

P. goodelli Grt. (16 a) is dark brown on the forewing, dusted with red-brown and mixed with grey, *goodelli*. with a double anterior, grey filled transverse line, the posterior line being single and dentate, behind the latter with white dots on the veins; the maculae are rather small, encircled with black, the reniform macula is whitish, pupilled blackish-brown; the undulate line is grey, interrupted, proximally with small black sagittae. Hindwing blackish-brown. Canada, North-Eastern and Central States.

P. acutermia Sm. is closely allied to *goodelli* (16 a), but smaller and darker, the marking hardly noti- *acutermia*. ceable, only the apical part of the forewing with much more distinct markings; at the end of the coniform macula often with a small black spot, the upper maculae partly marked by black scales. Expanse of wings: 30 to 32½ cm. Canada (Alberta, Manitoba, British Columbia); South Dakota.

P. sadales Drc. (16 a). Forewing black, dusted with purple grey and scantily strewn with black and *sadales*. white, with double black undulate transverse lines; coniform macula small, encircled with black, like the upper maculae, the ring-macula round, the reniform macula indistinct with a white dot at the upper end; the undulate line consists of a row of small brownish spots with small black sagittae proximally before it. Hindwing white, towards the margin dusted with a brownish-grey. Expanse of wings: 40 mm. Mexico (Guerrero).

P. chalcia Hmps. (16 b) is just as large as *sadales* and somewhat similar to it. Forewing red-brown, *chalcia*. dusted darker and strewn with a silvery purple colour particularly on the veins, with indistinct dark transverse lines, the anterior line double, the posterior dentate; the maculae are small encircled with black, the reniform macula with a yellowish-white dot at the distal margin; the slightly dentate undulate line is light reddish, proximally except the middle part bordered with a blackish brown. Hindwing dark reddish-brown with a white basal line of the fringes. Guatemala.

P. ectypa Morr. (= *bella* Grt.) (16 b) has grey forewings dusted with blackish-brown, and with a *ectypa*. violettish-brown tint before and behind the postmedian line, with double transverse lines, the posterior being dentate and filled up with white at the costal and proximal margins; coniform macula large, strewn and encircled with black, the upper maculae pupilled brownish and in white rings; before the yellowish-white undulate line there are small black sagittae. Hindwing brownish-grey with whitish fringes. United States (Delaware, New Jersey, West Virginia).

P. bolteri Sm. (16 b). Ochreous-brown, dusted with dark brown, with indistinct transverse lines, *bolteri*. the anterior line being double, the posterior line distally bordered with ochreous-yellowish and with light dots on the veins behind it; the upper maculae are encircled with black, between them there is a faded median shade, the coniform macula is absent; the grey undulate line is on both sides bordered with blackish-brown. Hindwing ochreous-brown. From New Mexico.

P. obscura Sm. (16 c) has blackish-brown forewings submedianly tinted somewhat reddish, indistinct *obscura*. single transverse lines, the posterior line dentate and distally bordered with brown; the maculae are encircled with black, the ring-macula U-shaped, the reniform macula grey, between them an indistinct undulate median line; the undulate line consists of a row of small black and grey sagittae. Hindwing light brownish-grey. Canada, United States (Wisconsin, Arizona).

- moerens*. **P. moerens** *Bltr.* (16 c) is on the forewing light olive-brown, dusted with blackish-brown, marked like the preceding with black and white dots on the veins behind the distal transverse line; both the upper maculae are in somewhat lighter rings; the ochreous-yellow undulate line is proximally marked black and more distinctly prominent. Hindwing blackish-brown, towards the base lighter. Chile.
- assimilis*. **P. assimilis** *Morr.* (16 c). Forewing black with a brown reflection, a black basal ray and a reddish-brownish base of the proximal margin. Transverse lines single, the posterior line dentate, the maculae encircled with black, the reniform macula proximally produced on the median, with traces of an undulate median line between them; the undulate line consists of a series of small black and white sagittae with a larger white spot near the anal angle. Hindwing yellowish-white with brownish veins and margin. Canada, Northern and Eastern States as far as New York. — The larva is black or dark green with broad light yellow subdorsal lines and lateral stripes; on brake and low plants.
- pulverulenta*. **P. pulverulenta** *Sm.* (16 a) is very similar, but it has the forewings much more intensely dusted with grey. From Alaska, British Columbia, Manitoba.
- albipuncta*. **P. albipuncta** *Hmps.* Lustrous red-brown with black single transverse lines, before the anterior line with a faded grey band with a white dot in it in the cell; the maculae are greyish-brown, encircled with black, the strangulated reniform macula on the grey median shade; the undulate line consists of small black spots distally pupilled white, the spot above the upper radial branch being larger, and with a large white spot at the anal angle. Hindwing brown, towards the base whitish. Expanse of wings: 36 mm. Peru. — **limbanensis** *Strd.* (= ab. 1 *Hmps.*) is on its head and thorax greyer and has an entirely greyish-brown marginal area.
- albostrigata*. **P. albostrigata** *Drc.* Thorax with red and grey hair, collar white bordered with red; abdomen grey, at the end black. Forewing black, in the cell a white ring, below it 2 white spots; a submarginal row of white streaks extends from the apex to the anal angle; fringes white speckled with black. Hindwing of a pure white. Expanse of wings: 45 mm. Southern Peru (Acopampa).
- egregia*. **P. egregia** *sp. nov.* (16 b) is very closely allied to *albostrigata*; the thorax is deep purple red, intermixed with white scales, the collar the same; abdomen laterally with long white hair, posteriorly greyish-reddish, the tufts purple-red mixed with black. Forewing deep purple red, strewn with lavender-grey, with double transverse stripes filled up with lavender-grey, the posterior stripe very sharply dentate, the basal area white, crossed by the jet-black double subbasal line; the upper maculae in broad and bright white rings, the reniform macula pupilled olive-brownish, the pupil itself is encircled with black; the median at the end, as far as it extends in the lower end of the macula, broad black; in the discal area more intensely strewn with black; in the purple red subterminal area there is an undulate line of jet-black sagittae exhibiting long and broad white streaks; those situate between the radial branches, as well as the second and third above the anal angle converge somewhat proximally; fringes black, on the ends of the veins whitish mixed with red. Hindwing whitish, somewhat strewn with grey, with dark grey veins and margin, the latter projecting dentately proximally on the veins. Expanse of wings: 44 mm. Of this magnificent species FASSL captured a ♀ on the Quindiu Pass (Colombia).
- aya*. **P. aya** *Dogn.* (= *zobira* *Schs.*) (16 c) is on the forewing deep purple brown, almost black with a reddish-brownish basal ray, and the costal margin is also somewhat lighter towards the apex; the markings are of a deeper black, very little visible and marked by ochreous-yellowish spotting, the undulate line being the most distinct with a large ochreous spot at the anal angle; on the margin there is a row of white dots. Hindwing diaphanous white, veins and margin greyish-brown. Mexico to Ecuador.
- nervina*. **P. nervina** *Dogn.* (16 c) has reddish brown forewings suffused with black, with rather indistinct double transverse stripes and the maculae in yellowish-brown rings and with dark brown pupils, the reniform macula distally with a white lunar streak and a white dot in the lower end, between both a faded median shade; undulate line ochreous-yellowish, proximally shaded with black. Hindwing whitish, in the distal half brownish-grey. Ecuador.
- canosticta*. **P. canosticta** *Drc.* (16 b) has red-brown forewings strewn with grey; the transverse lines are indistinct, bordered with grey, the posterior line distally marked by grey spots; between the grey, brown-pupilled maculae extends a darker median line; behind the dentate undulate line there are distinct grey roundish spots, the largest and lightest at the apex. Hindwing greyish-brown with yellowish fringes. Bolivia.
- magellana*. **P. magellana** *Mab.* (16 c). Forewing greyish-brown, strewn with black and reddish-brown, with double black transverse lines filled up with grey, and red-brown maculae in grey rings with an undulate black discal shade between them; undulate line white with a distinct W, on both sides bordered with small black spots. Hindwing whitish; veins and margin brownish. Patagonia.
- lebruni*. **P. lebruni** *Mab.* is on the forewing light yellowish-brown, except the proximal margin and the marginal area dusted and strewn with blackish-brownish, with single black transverse lines being on the averted sides bordered with grey, brown maculae in grey and black rings, the reniform macula connected with the postmedian line by black streaks; the undulate line is only marked by the light marginal area and small black sagittae before it. Hindwing whitish, distally brown. Expanse of wings: 32 mm. Patagonia.

P. noverca *Grt.* (16 b). Forewing reddish-brown, strewn darker, with a blackish basal ray with indistinct transverse lines bordered with grey, the posterior line being double, behind it black and white dots on the veins; the maculae are encircled with black, the ring-macula is U-shaped, the reniform macula whitish, above open, with brown pupils, between both a dark median shade; the fine, light undulate line is dentate, interrupted, with fine black internerval rays before and behind it. Hindwing light reddish-brownish, towards the margin darker. Nebraska, Colorado, California, Arizona. *noverca.*

P. tuana *Sm.* (16 c) has dull smoky brown forewings with a thick faded basal ray, with double transverse lines filled up with a somewhat lighter colour and a lighter subterminal area; all the three maculae are encircled with black, the coniform macula is short and broad, the ring-macula somewhat lighter, the reniform macula darker than the ground, distally bordered with white, which is the most prominent mark of the wing; before and behind the undulate line there are very small black sagittae. Hindwing smoky grey, towards the base lighter. Expanse of wings: 29 to 33 mm. Arizona. *tuana.*

P. stretchi *H. Edw.* (16 d). Forewing light grey, strewn with dark brown and black, with rather indistinct transverse lines, the posterior line being dentate; the coniform macula is a small black spot, the upper maculae are indistinctly encircled with black, between them an indistinct median shade; the undulate line is marked by a series of dark internerval spots. Hindwing whitish, strewn with brown, with a darker marginal band. From Colorado. *stretchi.*

P. francisca *Sm.* is allied to *stretchi*, of a more yellowish-grey colour, scantily strewn with black, with double, broken transverse stripes filled up with white, the maculae strewn with whitish and encircled with black and between them with a faded median shade; undulate line whitish, proximally prominently defined by the darker subterminal area, distally fadedly passing over into the white-strewn marginal area. Hindwing yellowish-grey with a broad blackish marginal band. Expanse of wings: 25 to 26 mm. California (San Francisco). *francisca.*

P. mania *Streck.* (16 d). Forewing reddish-brown, strewn and dusted with a darker colour, with a darker discal and marginal area and white-strewn veins; the transverse lines are single, the posterior line dentate, with white dots on the veins behind it; the upper maculae are light reddish, encircled with black, the reniform macula pupilled darker, below dotted white and proximally produced on the median; before the light undulate line there are minute black sagittae. Hindwing brownish-grey with yellowish fringes. Colorado, Arizona. *mania.*

P. delecta *B. & McD.* (16 d). Dull smoky brown, strewn with grey, indistinctly marked; transverse lines double, filled up with a lighter colour, the maculae are small, ochreous-yellowish and encircled with black, between them a dark median shade; behind the postmedian line white dots on the blackish veins; the indistinct undulate line is lighter yellowish. Hindwing smoky grey. California. *delecta.*

P. megaera *Sm.* (16 d). Forewing quite light grey, tinted ochreous-yellowish, with rather indistinct markings; transverse lines single, dusted, the posterior line dentate, the ring-macula quite indistinct, the reniform macula is a small darker spot, between both there is a dusted median shade; undulate line light, proximally and distally bordered by a darker colour. Hindwing whitish with a broadly darkened margin. Colorado. *megaera.*

P. densa *Sm.* (16 d) is allied to *megaera*, smaller, with narrower wings, much darker, strewn with dark brown, the folds striped light, behind the distal transverse line with black streaks on the veins; the light, indistinct undulate line is proximally bordered with blackish-brown. Hindwing darker. Colorado, California. *densa.*

P. canities *Hmps.* (16 d) is a small, quite insignificant, ochreous-brownish species strewn with white; the transverse lines are quite indistinct, behind the distal line there are whitish dots on the veins; the maculae are only marked by some yellowish and darker scales, the undulate line the same. Hindwing whitish, dusted with brown, towards the margin darker. California. *canities.*

P. anguina *Grt.* (16 d) has bluish-grey forewings dusted with blackish-brown, particularly the discal area is darkened, before it a black basal ray; transverse stripes double, the posterior stripe dentate, with black streaks on the veins behind it; coniform macula large, encircled with black, the upper maculae likewise large, pupilled brown and with grey rings; the grey undulate line is marked brown and subanally crossed by a black ray. Hindwing white, in the ♀ brownish-grey, on the veins and margin brownish. From Canada to Arizona. *anguina.*

P. imbuna *Sm.* (16 e). Forewing dark ash-grey, above the bent black basal ray somewhat lighter, both the transverse stripes being double, with somewhat lighter grey fillings; the long, coniform macula is encircled with black, its apex extending to the postmedian line; both the upper maculae likewise large, the reniform macula with both its ends touching the posterior transverse line; undulate line irregularly broken, at the anal angle scaled white, proximally defined by dark spots. Hindwing whitish, in the ♀ smoky grey, at the margin blackened. Expanse of wings: 30 to 34 mm. Pennsylvania, Indiana. *imbuna.*

P. vicina *Grt.* (= *teligera* *Morr.*) (16 e) is allied to *imbuna*. Forewing whitish, dusted and strewn with blackish-brown, with a bent black basal ray and double transverse lines filled with a somewhat lighter grey, the posterior line being mostly single, posteriorly extended to streaks on the veins, both lines connected by the narrow, pointed coniform macula which is above bordered with red-brown; the upper maculae with whitish rings; before the grey undulate line there are small black sagittae, at the anal angle a black and white

spot; the marginal area is darker. Hindwing white, on the veins and margin brownish. Eastern States (Maine, New York).

acutipennis. **P. acutipennis** Grt. is the southern representative of *vicina* and very much like it; more bluish-grey and more intensely strewn with black, in the discal area of the forewing except the proximal part suffused with black. Texas and California.

pensilis. **P. pensilis** Grt. (16 e) is still lighter than *vicina*, marked very much like it; the black basal ray is above bordered with red-brown, the cell and the space behind the reniform macula being also tinted red-brown; the transverse lines are filled up or bordered with white, the small maculae in grey rings; the undulate line consists of a row of yellowish-white moon-spots, proximally bordered by black sagittae. Hindwing diaphanous white, on the veins and margin brownish. — **indistincta** Strd. (= ab. 1 *Hmps.*) has more faded and more indistinct markings on the forewing and probably belongs to a different species. Canada to Texas, California and Arizona.

doira. **P. doira** Streck. (= *ascula* Sm.) (16 e). Forewing grey with a white costal band and a short black basal ray; the double transverse stripes are filled up with white, the maculae are in white rings, from the end of the reniform macula a white stripe extends to the oblique white apical patch, above the anal angle there is a large, oval, white spot; the veins in the subterminal area are striped black, the undulate line is white, bordered with blackish-brown; fringes speckled brown and white. Hindwing white, veins and margin brownish, in the ♀ with a darker discal spot and transverse line behind it. Expanse of wings: 27 mm. Described from Utah.

sareta. **P. sareta** Sm. (16 e) is very similar to *doira*, but on an average smaller, of a brighter bluish-grey colour, and with purely white hindwings the margin of which exhibits but traces of brownish; also in the ♀ they are white, at the margin but slightly smoky. The forewing is dusted with yellowish or brownish in the discal cell, mostly down to the coniform macula. Expanse of wings: 25 to 28 mm. Arizona; Minnehaha.

larissa. **P. larissa** Sm. is allied to *anguina* (16 d), less robust, the marking otherwise very similar, the hindwings more uniformly brownish-grey. From Arizona. There is still great obscurity in this whole group.

agnata. **P. agnata** Sm. The ground-colour is a monotonous ash-grey, in the ♀ somewhat darker, with double, distinct transverse stripes; coniform macula rather small, encircled with black and often above and behind it somewhat dusted with red-brown, the upper maculae are rather large, in light grey rings and encircled with black, between them a dark median shade; the whitish undulate line forms two distally directed bows, between them with an acute angle showing proximad, above the anal angle more prominent in the shape of a white crescent; behind it dark dusting. Hindwing smoke-grey, in the ♀ darker. Expanse of wings: 31 to 34 mm. Arizona.

segregata. **P. segregata** Sm. (16 e) is larger than the preceding and darker brown with a slight purple reflection; transverse lines single, black, on the averted sides bordered with grey, on the submedian fold connected with brown; the maculae are large, grey, encircled with black, the reniform macula distally somewhat shaded with reddish-brownish; the white undulate line is on both sides spotted blackish. Hindwing greyish-brown. Canada. (Alberta, Columbia).

gussata. **P. gussata** Sm. (16 f) has brownish-grey forewings dusted with purple blackish, with indistinctly double transverse stripes bordered with whitish, behind the posterior stripe grey and black streaks on the veins, to it extends a black stripe from the small coniform macula; the upper maculae are large, between them there are traces of a dark median shade; before the indistinct light undulate line small black sagittae. Hindwing dusted with brown, with white fringes. Canada.

albomarginata. **P. albomarginata** Drc. (16 f). Forewing purple grey, dusted with blackish, in the discal area black, in the marginal area yellowish-white, scantily strewn with black; the anterior transverse line is white, bordered with black, the posterior line is double, filled up with white, both starting from rather large pinkish-white costal-marginal spots; the coniform macula is marked by a white moon-spot behind it, the upper maculae are pink, in white rings, above the median connected by a pink stripe being continued along the upper median branch and terminating at the undulate line which is only marked by the coloristic contrast of the purple grey post-median area and of the white marginal area, proximally at the costal margin and proximal margin bordered by black spots, in the lower half distally by pink crescentiform spots. Hindwing blackish-brown, fringes white, at the apex black, in the centre speckled. Expanse of wings: 32 mm. Costa Rica to Bolivia.

gumia. **P. gumia** sp. nov. (16 f) is very similar to the following *albiflaviata*, but it differs by simplified larger markings; the proximal-marginal part is black and distally cut off oblique to the anal angle, the costal-marginal part is greenish-white except a large black spot crossed by the fine posterior transverse line; black are besides the costal-margin itself and the cellular filling between the maculae which are connected below; in the black proximal-marginal part the very large white dentiform spot is situated behind the coniform macula, the 3 fine transverse lines, a patch in the centre of the proximal margin, and a small proximal-marginal stripe at the anal angle. Hindwing more extensively white. According to 2 ♂♂ from the Cuesta de Cillutincara in Bolivia (at an altitude of 3200 m), taken by FASSL.

P. albifluviata *Drc.* (16 f). Forewing greenish-white, in the proximal-marginal half of the basal and *albifluviata*. discal areas more or less dark purple grey; the marking is quite similar as in the preceding, but neater, more variegated, the white hook-shaped spot behind the coniform macula is smaller, the fringes more intensely speckled black, the hindwing much more extensively and darker brownish-grey. Colombia, Bolivia.

P. leucoceps *Hmps.* is likewise similar to *gumia* (16 f), but the ground is not greenish-white, but light *leucoceps*. brownish-grey, with a purple reflection, the markings otherwise very similar, but the maculae smaller, the hook-shaped spot behind the coniform macula more quadrangular, below produced towards the base; the marginal area is more whitish-grey, with minute darker clouds. Hindwing whitish with a broad brownish-grey marginal part. Peru. It is questionable whether this species, having been described as *Hadena*, does not coincide with **albomarginata** *Drc.*

P. ganeo *sp. nov.* (16 f) likewise resembles the preceding, it is somewhat smaller, of a dark purple *albomarginata*. grey ground-colour, much more intensely marked black; in the proximal-marginal half and postmedianly shaded *ganeo*. with chocolate brownish, very similarly marked as *leucoceps*, the maculae much smaller, separated, i. e. the reniform macula is not proximally produced, but it terminates obliquely downwards into a greenish-white stripe bifurcating at the margin in two points and being before shaded by the brown postmedian tint; in the centre of the margin and above the anal angle there is one rather large black spot each with two small white spots in each of them, the anal ones representing two convergent streaks; between them there are black marginal triangles before the distinctly black-speckled fringes. Hindwing whitish, on the margin and veins smoky. From Bolivia (Cuesta de Cillutincara), taken by FASSL.

P. hieroglyphera *Mssn.* (16 g) is on its greenish greyish-white ground covered with many mostly *hieroglyphera*. triangular black spots which almost correspond to the scheme of markings of the preceding species and are well recognizable from the figure; the maculae are below confluent. Hindwing of a purer white, only near the apex more intensely smoked. Ecuador and Colombia.

P. laeta *Mssn.* (16 f) is a very small species with white forewings being dusted with light brown as *laeta*. far as the posterior transverse line; the anterior transverse lines are double, filled up with white, the posterior line is single, distally bordered with white; coniform macula absent, behind it a small white hook-shaped spot, the upper maculae are small, with brown pupils and white rings; the undulate line is marked by three black wedge-shaped spots before it. Fringes speckled grey and black. Hindwing white, veins and margin brownish. Ecuador.

P. melanoleuca *Drc.* Forewing white, at the costal margin spotted black; near the apex with 3 large *melanoleuca*. black spots, two oblong ones at the anal angle and a large long spot at the proximal margin crossed by two narrow white lines, the distal margin is scantily strewn with black, the fringes are speckled white and black. Hindwing white with a black apex and distal margin. Expanse of wings: 38 mm. Peru.

P. beani *Grt.* (16 g) is a large species with purple grey forewings dusted with brown and ferruginous *beani*. red, with single black transverse lines being bordered with grey on the averted sides, the posterior line being dentate; between the large, brown-pupilled and grey-ringed maculae extends an indistinct bent median line; the fine grey undulate line with a distinct W is proximally shaded with red-brown. Hindwing dark brown, towards the margin darker with white fringes. Illinois, Texas, Colorado.

P. mutilata *Sm.* (16 g) is marked the same as *beani*, but it is smaller and of a more brownish-grey *mutilata*. tint, in the basal area below the cell and behind the coniform macula tinted somewhat yellowish, the upper maculae whitish, encircled with black; proximally at the undulate line minute black sagittae. Hindwing dark brown. Canada.

P. palilis *Harv.* (16 g) has whitish forewings partly tinted ochreous-yellowish, strewn with thick *palilis*. blackish-brown scales, in the marginal area dusted with dark, the black transverse stripes indistinct, the posterior stripe dentate; between the very indistinct, somewhat darker scaled maculae extends a faded dark median shade darkening the cell; the undulate line is proximally accompanied by small dark spots; the ♀ is dusted very much darker except the subterminal area. Hindwing in the ♂ white, in the ♀ brownish-black. Texas.

P. bicolor *B. & McD.* (16 g, h) is similarly marked, but much darker than the preceding species, *bicolor*. without its sexual dimorphism; the forewing is blackish, dusted with white, with a faded, indistinct marking; the transverse lines are double, filled up with white, dusted, the maculae are strewn and encircled with white; behind the postmedian line at the proximal margin a large white spot; before the indistinct white undulate line there is white dusting spread; hindwing in the ♂ white, at the margin smoky, in the ♀ dark brownish-grey. Texas.

P. stenotis *Hmps.* (16 i) is a smaller species with narrow white forewings, strewn with blackish- *stenotis*. brown, in the discal area dusted with blackish-brown, with a short black basal ray; transverse lines double dentate, the white maculae dusted with brownish and encircled with black; before the undulate line there are small black sagittae, behind it the marginal area is darker. Hindwing white, at the margin brownish. California.

P. longiclava *Sm.* (16 h) is similar, the forewing still narrower, more greyish-white, in the middle third *longiclava*. of the costal margin down to the median dusted with blackish-brown; the transverse lines are quite rudimentary, the coniform macula uncommonly large, extending almost to the posterior transverse line; before the undulate line small brown sagittae, behind it the marginal area is darker with black streaks on the veins. Colorado.

- renigera*. **P. renigera** Steph. (= *herbimacula* Gn., *infecta* Wkr.) (16 h). Forewing purple brown, in the basal area below the cell with an oblique black streak and a golden green spot as far as the anterior transverse line which is proximally scaled somewhat lighter; behind the distal transverse line some green scales; the reniform macula is pupilled green and encircled with black and white, behind and below it is black dusting; behind the postmedian line there is a green spot towards the proximal margin; the undulate line consists of small black spots with green and light scales no them, the marginal area behind it is darkened by blackish. Hindwing white, costal margin and distal margin brownish. Canada to Colorado. — Larva dirty brown, on the dorsum yellowish with brown rhombic spots in it, with narrow indistinct subdorsal lines and lateral stripes being upwards bordered with black. It lives on low plants.
- stricta*. **P. stricta** Wkr. (= *ferrea* Grt.) (16 h) is a smaller, red-brown species with single dark transverse lines, the small maculae encircled with black, the reniform macula with a purely white ring, on the median proximally produced, between it and the ring-macula a dark median line; behind the light undulate line the marginal area is dark brown. Hindwing yellowish-brown. Canada, United States. — f. **cinnabarina** Grt. is not red-brown, but dark brown with a purple tint, the subterminal area except the costal-marginal part is red. California. — f. **tenisca** Sm. (16 h) is larger, more yellowish-reddish, in the discal and marginal areas darker, in the subterminal area yellowish, towards the undulate line passing over into a bright velvety reddish; the transverse lines are filled up with white. Utah, Montana.
- circumcincta*. **P. circumcincta** Sm. (16 h) is very similar to *stricta*, larger and darker with somewhat larger maculae, the reniform macula proximally not or hardly produced, the subterminal area being particularly towards the proximal margin much lighter purple grey. The hindwing is much lighter, yellowish-white with somewhat darkened margin and veins. California.
- soligena*. **P. soligena** Mschlr. (16 h) somewhat recalls the palearctic *B. amica* Tr. (vol. III t. 15 e), but it is much smaller. Forewing violettish-red, in the basal and discal areas darkened with brown, with double black transverse stripes with light yellow fillings, the posterior stripe dentate, and with large maculae in yellowish rings and encircled with black; from the darker reniform macula a dentate median line extends to the yellowish proximal margin; the interrupted undulate line is yellowish-white. Hindwing greyish-brown. Described from Jamaica.
- spiculosa*. **P. spiculosa** Grt. (16 i) resembles *renigera*, but it has no green. Groundcolour purple brown, feebly dusted with grey, the double transverse stripes are finely filled up with white; characteristic is the reniform macula being below proximally extended into a point, on the blackish ground; the subterminal area is lighter and more reddish, the undulate line is light, the marginal area behind it darkened. Hindwing white, on the veins and margin brown. Nevada, Arizona.
- lorea*. **P. lorea** Gn. (= *ligata* Wkr., *dodgei* Morr.) (16 i). Forewing light red-brown, strewn darker, in the discal area suffused with a deeper red, with brown-striped veins and single transverse lines; the maculae are in grey rings and encircled with dark brown, the reniform macula in the lower part pupilled blackish, between both a dark median line; the light undulate line is proximally bordered with brown. Hindwing yellowish-brown. Canada, United States to Colorado. — The yellowish-brown larva with blackish rhombic spots on the dorsum lives polyphagous on low plants.
- olivacea*. **P. olivacea** Morr. (16 i) is an extremely variable small species, with many forms, which, however, are not yet sufficiently cleared up with respect to their position and exclusiveness. In the nomenclatural type the forewing is grey mixed with olive-green and suffused and strewn with black, particularly in the discal area; transverse lines single, only partly double, on the averted sides bordered with grey, the maculae olive-green, strewn with single small black scales, in lighter rings and finely encircled with black; subterminal area somewhat lighter grey, analwards reddish-brownish, the undulate line light, proximally olive-green, distally bordered with blackish, in the marginal area the veins are striped black. Hindwing brownish-grey, towards the base lighter. — f. **comis** Grt. (16 i) is in the basal and subterminal area as well as on the shoulder-covers more or less white, also the reniform macula is in a white ring. — **obscurior** Sm. (16 i), described from Maine, is somewhat darker, the markings less contrasting than is usually the case in the normal ♀. — **lucina** Sm., from Manitoba and Wyoming, is somewhat darker with a contrastingly red-brown tint at the anal angle of the forewing. — **altua** Sm. (= *megarena* Sm.), from Colorado, is still darker. — **obnigra** Sm., from Vancouver and Oregon, is a similar form, but with a decided greenish tint at the anal angle. — **davena** Sm. from the Sierras is somewhat larger, with brighter markings, and a predominantly red-brown admixture in the basal and anal areas. — **rectilinea** Sm., from Vancouver, California and Oregon, is a western race with abundant green and yellowish-greenish tints on the forewing with a similarly coloured discal area which is prominently blackish in **petita** Sm., from Washington and Vancouver. — f. **vau-media** Sm. is an aberration from Colorado, in which the transverse lines are united like a V at the proximal margin. — In Mexico the form **hamara** Drc. (16 i) flies beside typical *olivacea* and *comis*. It approximates *obscurior* which likewise occurs there, but it is somewhat lighter, though with hardly any green tints, more uniformly purple-grey, in the postmedian area somewhat lighter, with reddish-brown subanal tints, the reniform macula distally thickly marked white. — The other forms fly from Canada in the whole of the United States to Florida and California. — Larva almost just as variable as the imago, changing from greyish-brown to reddish-brown, with dark lunae crossed by the light dorsal line, with or without light reddish lateral stripes. It hides in day-time on low plants.

P. subpicta Schs. (16 k) is a small species with black forewings exhibiting a slight leaden reflection, *subpicta*. strewn with grey, before and behind the discal area white, dusted and strewn with light brown; the anterior transverse line is double, filled up with light brown, the posterior line is single with short black streaks on the veins behind it; the ring-macula and coniform macula are very small, the reniform macula is larger, white, pupilled light brown; undulate line marked by the contrast of the brown subterminal area and black marginal area. Hindwing dark brown with whitish or yellowish fringes. The under surface is rather variegated. Mexico (Orizaba).

P. laudabilis Gn. (= *indicans* Wkr.) (16 k) is a small, light green, common, likewise very variable *laudabilis*. species; in the type the ground-colour is a rather pure light green, with dentate, white-edged transverse stripes and a dark blackish discal area as far as down to the submedian fold, between the maculae tinted ferruginous reddish. This form occurs from the United States, beginning from New Jersey, through Mexico to Guatemala and Costa Rica. — A form particularly common in Mexico has the discal area darkened down to the proximal margin: **mediosuffusa** Strd. (= ab. 1. *Hmps.*) (16 k), in which the reddish colour between the *mediosuffusa*. maculae is mostly absent, though it may also be present. — Another form: **rufoirrorata** Strd. (= ab. 3. *Hmps.*) *rufoirrorata*. has the whole forewing dusted and strewn with a light reddish-brown. — In Mexico the species is apparently still more variable. A form being intensely strewn with grey across the whole wing with a not darker discal area and absent or but quite faintly reddish discal spot may be denominated **lichenea** *form. nov.* (16 k); from *lichenca*. the district of Orizaba there are particularly great numbers of it before me. — ab. **scribillata** *ab. nov.* (16 k) *scribillata*. is apparently confined to the district of Cuernavaca, it has an almost purely white ground-colour, being but very slightly tinted olive, the discal area not darkened and extremely fine markings, at the costal margin with black streaks arranged at equidistances. — From the capital there are before me very small, slightly built specimens taken in October and November, resembling the type in the ground-colour, but exhibiting very much less decorative markings, particularly the subterminal area is almost void, and the discal area is scarcely darkened, without a reddish macular spot: ab. **egestosa** *ab. nov.* (16 k); it may be a form of another *egestosa*. generation or also a starved form. — ab. **lunata** *ab. nov.* (16 k) is entirely white without any green or red with *lunata*. an intensely prominent, jet-black discal area with the white reniform macula in it, the ring-macula being absent; besides only yet a triangular dark subcostal spot and the basal marking that are more prominent. In numbers from Tehuacan (Puebla). — **suda** *form. nov.* (17 a) looks quite different and strange, being of *suda*. a light lilac-grey with the darkened blackish discal area of the typical form, below the submedian quite extinct, between the maculae with the reddish spot, all the postmedian markings indistinct, only the undulate line marked by small rufous spots; in numbers from Zacualpan. — From Tehuacan (Puebla) there is another form before me, representing an intermediate stage between *rufoirrorata* and *lichenca*: **conspersa** *ab. nov.* which *conspersa*. on its bluish-grey ground-colour is coarsely strewn with black and brown scales, whilst the slightly darker discal area is continued to the proximal margin, without any green tints, with very distinct transverse lines. All these forms are only single extreme types picked out from all kinds of transitions, and there might be quite a number of other denominations, if it were worth mentioning them; they all belong for certain to *laudabilis*. — To what extent the variability may go is shown by an extreme *lunata*-form which we denominate: ab. **y-nigrum** *ab. nov.* (17 a). — The brown larva with darker dorsal spots and a light lateral line lives poly- *y-nigrum*. phagous on low plants.

P. illaudabilis Grt. resembles a *laudabilis* without any green, with an entirely white ground-colour. *illaudabilis*. It was formerly ranged as a form of *laudabilis*, but of late it is considered to be a distinct species. California.

P. strigicollis Wall. was formerly taken to be a synonym of *laudabilis*, but according to careful in- *strigicollis*. vestigations it is a distinct species. It is more slender, with narrower, triangular forewings showing a more pointed apex, and it never has the fine, light green colour, being mostly whitish, often tinted olive-greenish or moss-green; the discal area may vary from olive-brown to blackish, never with reddish tints; the transverse lines are rather close together, though they never converge so much towards the proximal margin. The hindwing is in both sexes lighter, whitish. The genital organ is different. Colorado, Arizona and Utah.

P. marmica Schs. (17 a). Forewing white, almost entirely dusted with blackish-brown except a white *marmica*. basal spot and an anal spot; transverse lines single, the posterior line dentate, the maculae in grey rings and pupilled dark, the ring-macula is small and obliquely elliptical; the undulate line consists of small black sagittae distally bordered with white, and there is also an apical white spot, below it the marginal area is blackish-brown. Fringes speckled black and white. Hindwing diaphanous white, costal margin, distal margin and veins darkened. Mexico (Oaxaca).

P. ciniva Schs. (17 a) has bluish-white forewings in some places dusted with grey and thickly strewn *ciniva*. with black, the transverse lines being only double at the costal margin, the maculae finely encircled with black, the ring-macula small and round; the undulate line is irregular and indistinct, with a blackish streak-shaped spot above the anal angle behind it, with 2 white dots in it. Hindwing diaphanous white with brownish veins and margin. Mexico (Oaxaca).

P. hodeva Dre. (17 a) differs from *ciniva* by the forewing being somewhat more mixed with brown, *hodeva*. with a black-dusted discal area only leaving free the proximal-marginal part, and a black basal ray, white filled transverse lines and white-ringed, brown-pupilled maculae; the undulate line is whitish with blackish spots behind it on the two folds. Hindwing as in the preceding. Guatemala.

- cleptosche-*
ma. **P. cleptoschema** Dyar (17 a). Forewing grey, irregularly speckled darker, with a white basal stripe, parted and bordered by black; the anterior transverse line consists of 3 white, interrupted bows not bordered with a darker colour, the posterior line being black, single, dentate, submedianly bordered with white; the broad coniform macula is encircled with black, the upper maculae the same, the reniform macula has distally a white line; undulate line black with a larger patch at the costal margin and above the anal angle, here with a white patch below it. Hindwing white, but grey at the costal margin, apex and narrow at the distal margin. Expanse of wings: 27 mm. Mexico (Tehuacan).
- naida.* **P. naida** Dyar. (17 a). Uni-coloured dark slaty grey with a long black basal ray with fine black, at the proximal margin nearing transverse stripes being connected with each other by a black stripe from the reniform macula; the somewhat lighter maculae are finely encircled with black, the reniform macula is pupilled with a red-brown crescent; undulate line indistinctly lighter with a black streak above the anal angle. Hindwing whitish. Allied with *seminaria*, but not so variegated. Mexico (City) in August.
- trasca.* **P. trasca** Dyar (17 b) has dark grey forewings, with a blackish spotted subbasal line, behind it as far as the anterior transverse line a lustrous olive-green space: between the transverse lines, which are nearing each other very much at the proximal margin, the median area is of a darker grey, the somewhat lighter maculae are finely surrounded with black, the whitish undulate line is indistinct, at the anal angle with a black, below it white-spotted anal ray. Hindwing whitish, at the apex and distal margin shaded with grey. Mexico (Tehuacan) in August.
- transvitta.* **P. transvitta** Dyar (17 b) is another small, very similar species, of a light grey, finely strewn darker, with a black basal ray bifurcating at the end; the proximal transverse line is whitish, broadly bent outwards, terminating at the proximal margin near the distal similar line, between both lines, adjoining the proximal line, there is a broad oblique shade the lower end of which is obliquely cut off by the distal transverse line; the upper maculae are hardly recognizable, blackish; of the undulate line there only remains a white patch above the anal angle; fringes speckled darker. Hindwing whitish, veins and distal margin darker. Expanse of wings: 22 mm. Mexico (Tehuacan) in August.
- verruca.* **P. verruca** Dyar. Forewing blackish-grey, with a black basal ray cutting the basal line; the proximal black, white-edged transverse line consists of 3 bows; the black, pointed coniform macula touches the distal similar transverse line; ring-macula very small, the reniform macula white, pupilled black; undulate line white with a black streak above the anal angle. Expanse of wings: 22 mm. Mexico (Tehuacan) in September.
- dima.* **P. dima** Dyar (17 b) is on the forewing dark lilac grey, almost blackish, with fine black, towards the proximal margin convergent transverse lines enclosing the narrow median area, which is blackened as far as the submedian fold and in which the large, doubly ringed maculae are situate; behind the postmedian line at the costal margin a dark triangular shade; undulate line extinct. Hindwing white, at the margin and on the veins brownish. Mexico (Zacualpan).
- rodora.* **P. rodora** Dyar (17 b) is of a delicate lilac grey, in the disc tinted brown, with a dark fine basal ray; the fine, double, dentate transverse lines are rather indistinct, the coniform macula is above marked brown, the ring-macula is extinct, the reniform macula encircled with yellowish, proximally finely, distally very thickly; the light, bent undulate line terminates into the lilac subapical shade; the dark fringes are spotted black. Hindwing blackish-brown, towards the base whitish with dark veins. Expanse of wings: 28 mm. Mexico (City). August. The colouring is the same as in *pensilis* (16 c), but the species is smaller, the transverse lines are well separated and not united by the coniform macula.
- phaulocy-*
ria. **P. phaulocyria** Dyar (17 b) has lustrous lilac grey forewings with a discal area being darkened below the cell; at the base of the costal margin there is a large, almost square, flesh-coloured reddish spot, below bordered by the black basal ray; the anterior transverse line is double, indistinct, the posterior line angular on the middle radial vein, not undulate or dentate, light, proximally accompanied by a black line, close in front of it the broad median shade; reniform macula grey, distally white, behind it reddish-brown dusting; distal area not or only slightly lighter; close at the distal margin is the undulate line, which is dusted whitish. Hindwing dark brownish-grey with light fringes. Mexico (Zacualpan).
- eucyria.* **P. eucyria** Dyar (17 c). Forewing as far as the postmedian line dark brown, behind it flesh-coloured reddish-grey like a spot at the base of the costal margin, marked almost like in *phaulocyria*; the marginal area is shaded with blackish, before it the entirely indistinct undulate line powdered with whitish. Hindwing in the ♂ whitish, at the margin narrowly smoked, in the ♀ quite brownish-grey. Mexico (Cuernavaca).
- alboguttata.* **P. alboguttata** Grt. (17 b) has black forewings dusted with silvery blue before and behind the discal area, with black, white-edged transverse lines; the maculae are finely encircled with black, the reniform macula is pupilled brown and in a white ring; the white undulate line is proximally defined by small black sagittae; fringes speckled white. Hindwing whitish, on the veins and margin brownish. Oregon, California, New Mexico.
- caneospars-*
sata. **P. caneosparsata** Dogn. is on the forewing densely strewn with black, olive-grey and white, with white and black indistinct markings; white dots at the costal margin represent the beginnings of transverse lines; the ring-macula is indistinctly encircled with black, above it at the costal margin a white dot, surrounded by

2 black ones; transverse vein black, before it below a white costal-marginal dot an indistinct shade of the reniform macula; undulate line marked by small black internerval spots with white pupils. Fringes speckled white and black. Hindwing white, with a black discal dot and marginal line also somewhat blackening the veins. Expanse of wings: 33 mm. Quindiu Pass.

P. restora Sm. is very closely allied to the group of *laudabilis-strigicollis*, the marking is the same as *restora*. in the latter species, the light areas pale green, at the anal angle with a black spot, the transverse lines filled up with white; the discal area is almost black, at the proximal margin mixed with moss-green; marginal area dusted with black; the jet-black coniform macula extends almost to the posterior transverse line; the small ring-macula has a black central dot and green ring, the reniform macula is large, with a white ring and moss-green pupil. Hindwing in both sexes smoke-grey, much darker than in the similar species. Expanse of wings: 27 to 28 mm. British Columbia (Kaslo).

P. marinitincta Harv. (17 c) has whitish or light brownish-grey forewings more or less mixed with green, *marinitincta*. with a black discal area and basal ray; anterior transverse line double, filled up with white, the posterior line single, behind it a black anal ray; the maculae are small, whitish, encircled with black, between them an undulate median line; the undulate line consists of black and white sagittae. Hindwing blackish-brown with whitish fringes. Texas.

P. datis Drc. (= *tepeca* Schs.) (17 c). Forewing slate-coloured black, strewn with whitish and inter- *dati* mixed with orange-red scales, on the veins black, with a black basal ray; transverse lines double, the posterior line dentate, towards the proximal margin edged with whitish; maculae small, in brown rings, between them a dark median shade; marginal area more intensely orange, with a blackish costal marginal spot and a black anal ray. Hindwing whitish, costal and distal margins brownish-grey. Mexico *).

P. psittacus H.-Schäff. (17 c) is a beautiful, metallic lustrous moss-green species, on the veins striped *psittacus*. more bluish-green, with interrupted double black transverse lines, between which the median area is more or less dusted with black, with the green, black-pupilled maculae; the undulate lines consists of black moon-spots. Hindwing dark brown with yellowish fringes. Mexico, Guatemala, Costa Rica, Venezuela.

P. jocosa Schs. (17 c) is very similar to *psittacus*, but larger on an average, with broader wings, and *jocosa*. much darker, particularly in the discal area more coherently black; near the anal angle there is a conspicuous, large, triangular black spot bordered by 2 bent, light bluish-green streaks. Hindwing darker blackish-brown. Mexico.

P. roberti sp. nov. (17 d) in contrast with *jocosa* is lighter than *psittacus*, with narrower wings, the *roberti*. colour is a lighter yellowish green, the black colour more in the shape of circumscribed spots, the interrupted transverse lines and the undulate line are distinctly bordered with white, the undulate line almost straight, only on the submedian fold proximally projecting in an acute angle, subcostally proximally bordered by 3 large, between them by 2 very small black spots. Hindwing light greyish-brown. According to 1 ♂, 2 ♀♀ from Mexico (Orizaba), taken by ROBERT MÜLLER; the type (1 ♀, November 1909, allotype 1 ♂, April 1910, paratype 1 ♀, September 1910) in the Coll. DRAUDT.

P. marea Schs. (17 d). Forewing white, in the basal half dusted with reddish-brownish, and light *marea*. bluish-green at the costal margin, on the submedian fold and at the proximal margin, the maculae marked green and black, with brownish transverse stripes; behind the undulate line which is proximally bordered with rufous, the marginal area is green with black streaks on the veins; hindwing white, on the veins and margin brownish. Mexico to Costa Rica.

P. chrysochlora Drc. (17 c) has yellowish-green forewings spotted brown at the costal margin, in the *chrysochlora*. discal area and at the proximal margin, with a brown, dentate postmedian line; the undulate line consists of brown spots; fringes speckled brown and green. Hindwing dark brown with yellowish-green fringes. South East Peru.

P. ignepectus Drc. Forewing dark brown, strewn with grey, with a broad green subbasal band and an *ignepectus*. olive-green undulate line, and a large olive-green reniform macula. Hindwing dark brown, towards the base lighter, with a red marginal line and brown fringes. Abdominal sides and anal tuft as well as the legs densely red-haired. Expanse of wings: 38 mm. South-East Peru.

P. albistriga Drc. Forewing dark brown, transverse lines bent, green; at the cell-end a white spot: *albistriga*. apex and distal margin almost quite green. Hindwing very dark brown with lighter fringes. Head and thorax greenish-brown, at the base of the abdomen a green hair-tuft. Expanse of wings: 30 mm. South-East Peru.

P. rufilinea Drc. Forewing dark brown, indistinctly spotted darker, the undulate line is a red line: *rufilinea*. fringes dark brown. Hindwing black, towards the base grey. Expanse of wings: 38 mm. South-East Peru.

P. olivocincta Gn. (= *folia* Schs.) (17 d). Forewing white, strewn with purple grey. Basal and discal *olivocincta*. areas tinted olive-green, with black transverse lines being marked white; undulate line proximally shaded with olive-green, distally on the two folds with olive-green spots strewn with blackish; the maculae are small, white, the ring-macula pupilled green. Brazil.

P. seminaria Schs. (17 b) and *P. viga* Schs. (25 a), mentioned by HAMPSON as synonyma of *dati*, are according to the information supplied by W. SCHAUSS different species, but at present their original descriptions are not accessible, they will be mentioned in the Additions.

- olivochroa*. **P. olivochroa** *Hmps.* has olive-green forewings with a yellowish spot at the costal base, black transverse lines being bordered with yellowish on the averted sides, the maculae surrounded with black and whitish, the reniform macula proximally produced on the median, in the centre strangulated; the undulate line consists of black, white-striped sagittae. Hindwing light yellowish-brown. Expanse of wings: 36 mm. Peru (Agualani).
- quadrilineata*. **P. quadrilineata** *Grt.* (17 d) resembles *laudabilis* (16 k). Hindwing bluish-white, strewn with light brown, in the discal area, in the ♀ also in the basal area dusted with black, with a black basal area, more or less double transverse lines filled up with white; the small white maculae are pupilled brown and in black rings, before and between them often red-brown tints; the veins in the darker strewn marginal area are black, the thickest on the lower median branch; undulate line proximally shaded with red-brown. Hindwing diaphanous white, at the apex and margin brownish. California. — **cinereoviridis** *Strd.* (= ab. 1 *Hmps.*) has a greyish-green ground-colour. — The dirty-brown larva, with a very coarse skin, has the same though more faded markings as *laudabilis*.
- rugosa*. **P. rugosa** *Morr.* (17 d). The whitish forewing is suffused and strewn with brown, below the base of the cell with coarse black scales, with lighter, indistinct transverse lines, before the posterior line below the cell black dusting; the white, brownish-pupilled maculae are situate in the blackened cell, the ring-macula is obliquely elliptical, above and below open, the reniform macula produced on the median and united with the ring-macula; before the light undulate line small black sagittae, behind it brown dusting. Hindwing reddish-brown, at the margin darker. United States (Maine).
- lunolacta*. **P. lunolacta** *Sm.* has blackish-brown forewings strewn with black, white and greenish, with double transverse lines filled up with greenish, with small narrow maculae, the ring-macula in a light ring and encircled with black, the reniform macula conspicuously surrounded with white; the whitish undulate line is proximally scaled blackish, distally above the anal angle with a large white crescent. Hindwing brownish-grey, towards the base lighter with white fringes. Expanse of wings: 27 mm. United States (Washington, Idaho).
- erecta*. **P. erecta** *Wkr.* (= *constipata* *Wkr.*, *innexa* *Grt.*) (17 d) is an extremely variable species; in the type the ground-colour is reddish-brown, densely strewn with purple grey, with dark, but feebly bent transverse lines bordered with light grey on the averted sides, the maculae being surrounded with light grey, the light undulate line bordered by a darker colour. Hindwing diaphanous iridescent white, at the margin and on the veins blackish-brown. From Florida and Texas to Mexico and Guatemala. — Quite light sand-coloured specimens exhibiting the lower half of the reniform macula filled up with blackish, and with a somewhat greyer marginal area may be called: **pallens** *ab. nov.* (17 e), in contrast with blackish-brown specimens showing hardly visible markings: **obscurior** *ab. nov.* (17 e). — Occasionally the subterminal space in dark specimens is conspicuously light whitish: = **albifascia** *ab. nov.* (17 e).
- basiplaga*. **P. basiplaga** *Sm.* (17 e) is very variable, dull blackish-brown, strewn with blackish, in the upper half of the basal area and generally in the subterminal area reddish-brown, in the ♂ dusted, towards the proximal margin turning into lilac, with a black basal ray and double transverse lines; reniform macula short and broad triangular, mostly continued to the posterior transverse line, the upper maculae rather small, in light rings, the reniform macula distally white; the whitish, irregularly broken undulate line is proximally defined by darker patches, distally by the darker marginal area. Hindwing in the ♂ whitish, distally brownish, in the ♀ quite brownish-grey. Arizona.
- uliginosa*. **P. uliginosa** *Sm.* (17 e). Forewing dull blackish-brown, dusted white, particularly in the basal and subterminal areas, with double transverse lines filled up with whitish, and large, whitish, darker pupilled maculae. Undulate line entirely blurred, whitish. Hindwing in the ♂ white, in the ♀ smoky. South Arizona, Texas.
- vittula*. **P. vittula** *Grt.* (17 e) is very similar to *uliginosa*, of a lighter grey, dusted and strewn with blackish-brownish, with a black basal ray and double transverse lines with somewhat lighter fillings, between them the median area is somewhat darkened; the small maculae in grey rings and encircled with black, between them an indistinct bent median line; the postmedian area is somewhat lighter, the undulate line but indistinctly defined against the darker marginal area, towards the anal angle more distinctly marked black and with a black anal ray. Hindwing white with brownish veins and margin. New Mexico.
- intentata*. **P. intentata** *Sm.* (17 f) is much larger, forewing brownish-grey, strewn with black, in the discal area tinted yellowish, particularly below the cell; transverse lines double, yellowish-white, the posterior line filled up with reddish; the maculae in whitish rings show darker pupils, the whitish undulate line is on both sides bordered with blackish-brown. Hindwing white, on the veins and margin brownish, in the ♀ quite brownish-grey. From Colorado.
- roseosuffusa*. **P. roseosuffusa** *Sm.* (17 f) has a whitish forewing suffused with pink, dusted with brownish-grey in the basal half as far as the discal shade, postmedianly at the costal margin, proximal margin and in the centre, as well as in the marginal area; the anterior transverse lines are double, filled up with whitish, the posterior line is single, dentate; the maculae are very small and indistinct, the ring-macula encircled with whitish, the reniform macula is a darker patch; before the whitish undulate line there are darker spots. Hindwing yellowish-brown. Arizona.
- falsa*. **P. falsa** *Grt.* is a species doubtful in its classification, similarly marked as *intentata* (17 f), smaller, with more bluish-grey forewings and a somewhat reddish-brown tint in the discal area, the hindwings being all white. From California.

P. secedens *Wkr.* (17 f) is very well distinguished by yellow hindwings with a broad dark brown margin. *secedens*. The forewing is dark brown, strewn with whitish, with single black transverse lines, small maculae in a darker ground, and black small sagittae pupilled white instead of the undulate line. Known from Canada.

P. basivirida *B. & McD.* (17 f) has yellow hindwings like *secedens*, with a dark brown marginal band, *basivirida*. but the purple brown forewing is of a bright green in the basal area, the maculae, the subterminal area, and particularly behind the reniform macula; transverse lines scaled white, the anterior line double. From Arizona.

P. goniophora *Schs.* (17 f). Forewing olive-green, in the disc dusted with brown, the anterior trans- *goniophora*. verse line is spotted white, the posterior line dark dentate, with white spots at the costal and proximal margins and single white dots in the centre; the ring-macula is a round white spot, the reniform macula a white streak, below proximally angled; the dark undulate line is spotted white. Hindwing brownish-grey with small white marginal spots. Brazil: Castro (Paraná).

P. rudis *Wkr.* (= *alboguttalis* *Wkr.*) (17 f) has dark brown forewings strewn with black and white, *rudis*. with white roundish spots instead of the transverse lines and maculae. Hindwing dark-brown with whitish antemarginal spots. Brazil (Theresopolis).

P. syrrudis *Dogn.* (20 b) looks like *rudis* (17 f); it is larger, the forewing olive-brown, all the markings *syrrudis*. represented by white dots: two subbasal ones on the costal margin and median, one dot at the base of the cell, three antemedian ones on the costal margin, median and submedian, then follow 3 internerval dots, one in the cell, one submedianly and one below it, the first and last with a small dot behind them; as a median line 6 dots: 1 on the costal margin, 2 at the cell-end, one each above and below the submedian fold, and one at the proximal margin; then follows a thick one behind the transverse vein, behind it 5 small dots, then 4, behind them a row of 9 on the veins, subterminally followed by 8 larger ones situate in interspaces; on the margin small internerval dots. Hindwing olive-grey, towards the proximal margin whitish. Expanse of wings: 35 mm. Colombia, from the Quindiu Pass.

P. albistellata *Drc.* Forewing light yellowish-reddish, in the discal area darker, in the basal area *albistellata*. white, at the costal margin spotted white, in the centre of the cell a small, at the cell-end a large white spot, several smaller ones below the cell and along the proximal margin, subterminally parallel to the distal margin a similar row. Hindwing yellowish-white with a black central spot. The ♀ is darker and of a more reddish tint, with smaller and more indistinct white spots. Expanse of wings: 24 to 26 mm. From South East Peru.

P. esopis *Drc.* (17 g). Reddish-brown, in some places strewn with black, the anterior transverse *esopis*. lines double, filled up with ochreous-yellowish, the posterior line single, distally bordered with ochreous-whitish; between the small ochreous-yellowish maculae in black rings there runs a darker median line, behind which the space is filled up with a dark brown as far as the postmedian line; the veins are subterminally striped white; undulate line white, irregularly dentate, proximally shaded with a dark brown; marginal area dark brown, at the apex and in the centre spotted whitish. Hindwing dark brown. From Guatemala.

P. incurva *Sm.* (17 g) has dark grey forewings tinted somewhat olive and strewn with blackish- *incurva*. brown, with a darker discal area; transverse lines double, the posterior line filled up with a lighter colour, being confluent with the lower end of the reniform macula; the maculae are small, in hardly lighter rings; the light undulate line is shaded darker, on the submedian fold traversed by a black ray. Hindwing white. Colorado, New Mexico, Arizona.

P. nipana *Sm.* (17 f) Forewing yellowish-reddish grey, strewn with smoke-brown, the distal half *nipana*. of the discal area somewhat darker, the subterminal area somewhat lighter than the rest of the wing, all the markings not very distinct; transverse lines double, the posterior line single, between them a darker median shade, the maculae encircled with a hardly darker colour; the narrow light undulate line is irregular. Hindwing smoky-brownish, at the margin darker. Arizona.

P. montara *Sm.* is very similar to *nipana* (17 f), yellowish greyish-white, strewn with black and *montara*. brown, the markings just as indistinct as in *nipana*, the most distinct is the dark median shade extending above the reniform macula; the transverse lines are double, the maculae rather large, encircled with black, the reniform macula distally dotted white; the undulate line is chiefly expressed by the contrast with the darker marginal area. Hindwing diaphanous whitish, at the margin brownish. From California.

P. alfkeni *Grt.* (= *perplexa* *Grt.*, *latens* *Sm.*, *occluna* *Sm.*) (17 g). Forewing dull yellowish-grey, in *alfkeni*. the ♀ more of a reddish tint, with an indistinct and incomplete marking, the darker pupilled reniform macula being the most distinct; transverse lines double, blackish, the posterior line often only composed of dots on the veins; undulate line yellowish, anteriorly shaded darker. Hindwing diaphanous whitish, at the margin smoky. The ♂ antennae exhibit short combs. From California, New Mexico and Arizona.

12. Genus: **Hadena** *Gn.*

We maintain this name of the genus, although it ought to be called *Heliophobus* *Bsd.*, because DUPONCHEL fixed *saponariae* (= *reticulata*) as the type of the genus. The genus exhibiting numerous tropical species with one representative extending into the northern region, is built exactly like *Polia*, but on the first abdominal

ring it exhibits a dorsal tuft, the other rings being without tufts; the thorax is somewhat more clad with hair, of a more quadrangular shape, the prothorax exhibits a mostly very distinctly bipartite tuft.

- graminea*. **H. graminea** Schs. (17 g) with the two following species forms a group of very closely allied and similar species. It is the smallest and neatest species with the lightest colouring and entirely white hindwings; the forewing is of a yellowish white, suffused with pinkish-reddish; the two white transverse lines are confluent on the proximal-marginal vein, the narrow maculae are obliquely downward convergent; a reddish-white stripe extending from the apex is connected with the postmedian line. From Brazil: Castro (Paraná).
- procincta*. **H. procincta** Grt. (17 g) is similarly marked as *graminea*, with the same transverse lines being confluent above the proximal margin, but it is much larger, stronger, of a much darker colouring, more olive-brown, with particularly quite dark hindwings. Its range extends to the north as far as Canada, to the south through Mexico as far as Costa Rica.
- graminivora*. **H. graminivora** Wkr. (17 g) very much resembles *procincta*, but it is easily discernible by the transverse lines not being united at the proximal margin, and a small ochreous-white oblique streak above the distal end of the coniform macula. Arizona, Mexico to Venezuela.
- elaeistis*. **H. elaeistis** Drc. (17 h) differs by the veins being in the proximal area more intensely striped reddish-white, the absence of the anterior transverse line which only forms a very long, pointed, distal tooth at the proximal margin, by a much longer white streak above the extremely long coniform macula, and by the upper maculae being confluent below; on the yellowish-white subterminal band parting the apex there are traces of the posterior transverse line. Hindwing whitish, on the veins and margin suffused with brown. North Peru.
- nectaristis*. **H. nectaristis** sp. nov. (17 h) is allied to *elaeistis* and also strongly recalls *Tmetol. polygona*; olive-brown, the whole costal-marginal area, the veins, the maculae being confluent in the shape of a V, and a subterminal band are very light yellowish-grey; the bordering of the maculae, strigiform rudiments of the transverse lines and the small spots of the undulate line are black, the latter distally accompanied by a light line; above and behind the coniform macula a narrow, long, white hook-like streak. Hindwing diaphanous white, on the veins faintly brownish. According to 1 ♂ from Mt. Tolima (Colombia), in the Coll. FASSL.
- albisignata*. **H. albisignata** Mssn. (17 i) probably belongs hereto; it is similar to *nectaristis*, but much smaller. Forewing yellowish-grey, the upper maculae light yellow, margined with dark, the reniform macula with a darker, concentric ring, between it and the long oblique oval ring-macula a dark brown spot; above and below the submedian fold fine black stripes, a similar bent one above the basal half of the proximal-marginal area; before the distal margin there is a row of blackish-brown wedge-shaped spots. Hindwing whitish with yellowish veins and a somewhat darker discal spot. From Bolivia (Tiahuanaco), from an altitude of 4500 m.
- oenistis*. **H. oenistis** Drc. (17 h) is somewhat like *graminivora*, but with broader wings, much darker, more red-brown, dusted with black, without the white-striped veins, only the median and the base of the lower radial branch being reddish-white, the others purple-grey; above the coniform macula there is a faintly lighter streak, the upper maculae are not confluent; the light subterminal band is like in *albisignata*. Hindwing blackish-brown with reddish fringes. From Northern Peru.
- resputa*. **H. resputa** sp. nov. (17 h) is allied to the preceding. Forewing with a copper-reddish reflection, brownish, strewn with blackish-brown, submedianly with a blackish-brown trapezoid spot between the double transverse lines being very convergent towards the proximal margin, the anterior line returning to the base below the the proximal-marginal vein as a flat bow above filled up with blackish-brown; the submedian trapezoid spot is above bordered by a white line. No ring-macula, the reniform macula is an oblique oval distally bordered with a somewhat purer white, and pupilled with a dark shade, behind it blackish-brown dusting; like in the allies a broad light stripe in the subterminal area extends from the apex to the proximal margin, terminating on the proximal-marginal vein and distally accompanying the posterior transverse line beginning from the lower radial branch; subapically it is inside bordered by 3 long deep blackish-brown wedge-shaped spots, below them some more smaller ones proximally to the postmedian line; the undulate line consists of black spots pupilled with small white sagittae; it projects towards the margin below the centre; hindwing brownish-grey, in the disc lighter, the light fringes with a dark, broad line of partition. 1 ♀ from Mt. Tolima (Colombia).
- eugrapha*. **H. eugrapha** Hmps. Forewing red-brown, mixed with grey and somewhat strewn with black, with a yellowish-white striped median as far as the undulate line, double transverse lines filled up with whitish, the anterior line exhibiting in front of it at the proximal margin a bent yellowish line; the posterior line unites on the upper radial branch with a light grey subapical band which is then continued along its distal edge to the proximal margin; above the coniform macula an oblique white streak, the upper oblique maculae are surrounded with yellowish-white, the reniform macula is produced on the median as far as the ring-macula; the undulate line consists of black sagittae striped yellowish-white. Hindwing white, at the margin brownish. Expanse of wings: 36 mm. South-East Peru.
- mesotoma*. **H. mesotoma** Hmps. is much smaller; forewing dark red-brown, except the discal area below the subcostal dusted with grey, with a reddish stripe on the proximal margin and a white-striped median and its branches proceeding from the lower cell-angle, otherwise marked very much like the preceding with the white-

filled double transverse lines, the posterior line converging with the apical stripe; both the upper maculae pupilled red-brown, in white rings, the ring-macula obliquely quadrangular, the reniform macula strangulated in the centre, proximally below produced as far as the ring-macula, distally prolonged as far as below and behind the lower cell-angle; the undulate line begins as an oblique, white subapical streak, otherwise like in *eugrapha*; marginal area grey. Hindwing whitish-brown with darker veins and margin. Expanse of wings: 28 mm. South-East Peru.

H. meridionalis *Hmps.* (17 h) entirely resembles *graminivora* (17 g) from which, however, it is at once distinguished by its lighter, white hindwings with a broad brown marginal band; besides the ring-macula is obliquely quadrangular like in *mesotoma*, and the coniform macula has no white stripe above it. Brazil (Rio de Janeiro). *meridionalis*.

H. uncifera *Mssn.* (17 i) has purple grey forewings dusted with blackish-brown, with a reddish-grey marginal area and the discal area dusted with red-brown; the double transverse lines are filled up with grey; behind the coniform macula is a large white angular spot, the upper maculae are pupilled red-brown, in yellowish rings, the ring-macula is obliquely elliptical, above open, the reniform macula proximally prolonged on the median; the undulate line consists of black sagittae pupilled yellowish. Hindwing whitish, on the veins and margin brownish. Colombia, Ecuador. *uncifera*.

H. calographa *Mssn.* (17 i). Forewing dark brown, strewn with blackish, with rather indistinct double transverse lines exhibiting hardly lighter fillings, the posterior line proximally composed of black, small sagittae or lunulae and being towards the proximal margin lighter whitish; maculae feebly lighter, at first encircled with whitish, then with black, the coniform macula below expanded on both sides and more or less confluent with the black, oblong ring-macula; above the reniform macula a white hook-shaped spot; from the centre of the post-median line a white stripe extends to the distal margin, from the upper third a similar one to the apex; undulate line composed of black sagittae being white-pupilled near the margin. Hindwing white diaphanous, the veins yellowish. Ecuador and Colombia. *calographa*.

H. clavifera *Hmps.* is somewhat smaller, with more intensely grey striped veins, the transverse lines with clearer white fillings; behind the coniform macula there is only a small, oblique, white streak, the upper maculae are pupilled grey, the discal area is not red-brown, and the marginal area not lighter grey; the undulate line is white, proximally bordered by black sagittae, behind it with black streaks as far as the lower radial branch, below it follows a V-shaped marking below which there is an oblique line. Hindwing white, on the veins and margin brownish, also at the proximal margin, and with a discal dot. Expanse of wings: 36 mm. South-East Peru. *clavifera*.

H. clavisigna *Hmps.* Forewing grey, dusted with brown and strewn with blackish, with a black sub-basal spot parted by white below the cell; the black transverse lines are double, the anterior line filled up with white, between them the median area below the cell is suffused with dark brown; at the end of the coniform macula is a yellowish-white hook-shaped spot; the upper maculae are in whitish rings and surrounded with black, the ring-macula towards the base concave, the reniform macula on the median prolonged to it, before, between and behind them are dark brown spots; the undulate line is a blackish-brown shade on which there are black, white-dotted sagittae and a white submedian stripe. Hindwing light reddish-brown, on the veins and margin darker. Expanse of wings: 32 mm. Peru (Acopampa). *clavisigna*.

H. uncisigna *Hmps.* (17 i) has bluish-grey forewings dusted and strewn with a dark brown, on the whole marked the same as the preceding, but the transverse lines are single, dark brown, only the anterior line is somewhat bordered with grey; the white hook-shaped spot is situated on a dark brown spot, the upper maculae are larger, laterally marked black, before and between them dark brown dusting; on the anal half of the proximal margin a red-brown stripe; the undulate line consists of an oblique black subapical spot with a white streak in it, a black spot behind the cell with 2 white streaks and a similar subanal one with a white line in it, between these spots there is a ferruginous brown colour. Hindwing white, veins and margin brownish. In the ♀ the white subterminal streaks are divided into spots. — In **reducta** *form. nov.* (= ab. *reducta*. 1 *Hmps.*) (17 h) the white hook-shaped spot is very small. Expanse of wings: 28 to 32 mm. Peru. *uncisigna*.

H. scurrilis *sp. nov.* (17 k). Forewing olive-green, costal margin, median and proximal-marginal vein, the filling of the maculae and the subterminal area are lilac-grey, with single finely dentate transverse lines; the cellular ground before and between the reniform macula and a narrow transverse streak behind it, as well as the broad coniform macula are blackish-brown; the white undulate line on which there are proximally high black triangular spots, is broadly interrupted below and above the radial branches; before the distal margin black triangular spots. Hindwing yellowish-white with brownish veins and small marginal triangles between them. 1 ♀ from Mt. Tolima (Colombia). *scurrilis*.

H. lithaphania *Dyar* (17 k) looks very different from all the others, with long, narrow forewings with an obliquely cut off distal margin; greyish-brown, dusted with blackish, with double blackish transverse lines, the posterior line finely dentate; coniform macula surrounded with black, ring-macula large, obliquely elliptic, light yellowish with a dark median line, the reniform macula with a slight bronze lustre, proximally bordered with black; undulate line spotted, brown. Hindwing brownish black with light fringes. From Mexico. *lithaphania*.

13. Genus: **Tholera** Hbn.

Distinguished by a stunted proboscis, otherwise the structure is entirely like *Hadena*, but the thorax is chiefly clad with scales, with loose tufts on the prothorax and metathorax. The ♂ antennae show long combs. The type of the genus is the European *Th. cespitis*. As to the genus comp. Vol. III, p. 80. Only 1 North American species.

americana.

Th. americana Sm. (17 i). Forewing ochreous-yellowish grey, strewn with black, with broadly white striped veins except the marginal area where they are black and on both sides edged with white; transverse lines single, indistinct; all the 3 maculae are large, encircled with black; before the white undulate line there are blackish-brown sagittae. Hindwing white with brownish veins and margin. From Canada and the United States as far as Wyoming and Montana.

14. Genus: **Hyperepia** B. u. Linds.

The only species having but recently been described approximates the following genus from which it differs by the absence of the frontal projection and of the claw-like spines on the anterior tarsi. From *Hadena* it differs by the thorax being purely clad with scales and by the less oblique distal margin of the forewing.

pi.

H. pi B. & Linds. has dark brown forewings with a lighter basal area and purple grey subterminal area, in older specimens dusted more loamy yellowish, with double transverse lines, the proximal ones being black, the distal ones more grey; maculae loamy-yellow, the ring-macula obliquely oval, the reniform macula narrowly crescentiform, above the median connected with the ring-macula by a loamy-yellow stripe which ends pointed towards the base before the ring-macula and contains a white line, forming together with the maculae an inverted π ; the undulate line is a brown shade, behind it with a light brown line and in the marginal area some small velvety black spots. Hindwing dull loamy yellow, on the veins and in the marginal half greyish-brown, in the ♀ quite greyish-brown. Expanse of wings: 28 to 30 mm. New Mexico, California.

15. Genus: **Epia** Hbn.

Proboscis developed, palpi short, erect; the frons exhibits in the lower part a conical truncate projection with a horny plate below it. The thorax is almost only covered with scales, in front and behind with loose tufts; the anterior tarsus shows on the outside of the proximal joints long, claw-like bent spines. Abdomen with but one basal tuft. Further particulars about the genus vid. Vol. III, p. 82.

capsularis.

E. capsularis Gn. (= *propulsa* Wkr.) (17 k). Forewing violettish-grey, dusted and strewn with light brown with double transverse lines; the small coniform macula is encircled with black and often filled up with black, sharply pointed; the upper maculae are large, encircled with black, the ring-macula in a white ring, the reniform macula pupilled brown, between them an irregular median line; the white undulate line with a distinct W is in the lower half crossed by black sagittae. The whitish hindwing is dusted with brown. Canada to New Mexico.

minorata.

E. minorata Sm. (17 k). Forewing whitish, dusted with light and dark brown, with double transverse lines; the coniform macula is a blackish, indistinct spot with a light one behind it, the upper maculae are brown, in distinct white rings and surrounded with brown; undulate line white with a short W and in the centre with black sagittae before it and three behind it. Hindwing blackish-brown with lighter fringes. Colorado, California.

amabilis.

E. amabilis B. & McD. (17 k) is very closely allied to *minorata*, but it has no brown tints, and the posterior transverse line is below the cell more bent proximally. The ground-colour of the forewing is a dark smoky-grey, in the discal area below the cell blackened. Hindwing dark smoky-grey, towards the base lighter, with a dark discal spot. California.

ectrapela.

E. ectrapela Sm. (18 a). The whitish forewing is densely dusted and strewn with brown, with a black basal ray; transverse lines strong, black, on the averted sides whitish; the long coniform macula is almost entirely filled up with black, with a whitish spot behind above it, the upper maculae are large, whitish, pupilled brown and surrounded with black; before the white undulate line with a distinct W there are small, feeble, blackish sagittae. Hindwing whitish, suffused with brown, at the margin darker. British Columbia, Colorado.

circumvadis.

E. circumvadis Sm. (17 k). Forewing white, in some places dusted with blackish-brown, with double transverse lines, a large, black-filled coniform macula with a white dentiform spot behind it and white, dark-pupilled upper maculae and an undulate median line between them; before the faded whitish undulate line there are some blackish sagittae, behind it on the discal fold a similar one. Hindwing light brownish-grey, at the margin darker. From Canada.

16. Genus: **Cardepia** *Hmps.*

Very closely allied to the preceding genus and chiefly distinguished by the reniform projection in the centre of the frons not showing a horny plate below it. All the rest as in *Epia*. In America. Only 1 species:

C. nova *Sm.* (18 a) is somewhat like a *Scot. trifolii*; the whitish forewing is densely strewn and dusted with red-brown and blackish-brown, the transverse lines only at the costal margin double, the posterior line sharply dentate and with black and white dots behind it on the veins; the small blackish-brown coniform macula is surrounded with black, the upper maculae are rather small, surrounded with light, the reniform macula below filled up with dark, between them a dentate median shade; before the indistinct light undulate line there are black sagittae in the middle. Hindwing white, on the veins and margin brownish. United States from Colorado to Arizona and New Mexico. *nova.*

17. Genus: **Trichoclea** *Grt.*

Distinguished from the two preceding genera by a small round projection on the frons with a horny plate below it; the palpi, particularly the last joint, are somewhat more porrect; the thorax is intermixed with hair; the first joints of the anterior tarsi exhibit the same bent, claw-shaped spines as in *Epia* and *Cardepia*. Several North American species; as to the palearctic species vid. Vol. III, p. 83.

T. decepta *Grt.* (= *paupera* *Drc.*) (18 a) has yellowish-white forewings dusted and strewn with yellowish-brown with rather indistinct double transverse lines, small maculae surrounded with black, of which the reniform macula is pupilled brownish-black, and an indistinct undulate median line between them; the white undulate line shows on the proximal side in blackish-brown shading minute blackish sagittae, and behind it the marginal area is darkened. Hindwing white, on the veins and margin brownish. United States. Utah, Arizona) and Mexico (Sonora). *decepta.*

T. antica *Sm.* (18 a) has whitish forewings strewn with brown, with single blackish transverse lines, the posterior line being dentate, distally bordered with whitish, and with small maculae finely surrounded with blackish-brown, the reniform macula in a grey ring and with a dark pupil; before the dark undulate line there are dark spots at the costal margin and behind the cell. Hindwing white with brown veins and margin. California, New Mexico. *antica.*

T. postica *Sm.* (18 a) is extraordinarily similar to *antica*; it is somewhat smaller on an average and chiefly distinguished by the anterior transverse line extending here almost straight from the costal margin to the proximal margin, whilst in *antica* it extends very obliquely distally to the submedian fold, whence it bends again proximally. From Colorado. *postica.*

T. edwardsi *Sm.* (18 a) is likewise closely allied to the two preceding species, with light brownish-grey forewings, at the end of the coniform macula small reddish-yellow scales; the ring-macula is extinct, the reniform macula marked by a small dark spot in the lower cell-angle; the undulate line is marked by a row of small dark sagittae. Hindwing white with a broad blackish-brown marginal band and darkened veins. California. *edwardsi.*

T. fuscolutea *Sm.* (18 b) is a somewhat larger species with brownish-white forewings with an ochreous-yellow tinge and strewn with a dark colour, indistinct dentate transverse lines and brown-pupilled maculae in white rings, the ring-macula obliquely elliptical, above open, the reniform macula prolonged proximad on the median; before the white undulate line there are small blackish-brown sagittae, behind it small dark spots. Colorado. *fuscolutea.*

T. u-scripta *Sm.* (18 a). Forewing yellowish-brown, strewn with a darker colour, on the costal margin and veins blackish-brown, strewn with white with quite extinct or absent transverse lines; the upper maculae are hardly visible, below the reniform macula there is a distinct white U-shaped line with a white line before it on the median; instead of the undulate line there are some small dark sagittae behind which the marginal area is darkened; fringes on the ends of the veins striped white. Hindwing light brownish-black, on the veins and margin darker. Colorado and California. *u-scripta.*

T. artesta *Sm.* (18 b) has light red-brown forewings strewn with white particularly in the proximal part and at the costal margin behind the middle; the indistinct transverse lines are on the averted sides edged with white, behind the posterior line there are blackish-brown and white dots on the veins; the upper maculae are in white rings, the ring-macula pupilled brown, the reniform macula white, its white ring being divided into several small spots; undulate line white. Hindwing white, on the veins and margin brownish. United States (Illinois, Colorado, Kansas). *artesta.*

T. ruisa *Forbes* differs somewhat from the diagnose of the genus by the frons being provided with a finely roughened convexity below which there is a foveolate hollow instead of the horny plate. Forewing dull reddish-brown with indistinct double transverse lines, behind the distal one with dark streaks on the veins; ring-macula extinct, the reniform macula large, with a dark pupil as the only dark spot in the uniform ground-colour, below distally with a roundish white spot. Hindwing dingy white with a darker marginal third. Expanse of wings: 30 mm. From North Carolina, described according to one specimen. *ruisa.*

18. Genus: **Nephelistis** *Hmps.*

Proboscis fully developed, the erect palpi reach to the vertex; frons like in the preceding genus with a slight upward projection with a horny plate below it. The thorax is predominantly covered with scales, in front and behind with loose tufts, a similar one resting on the first abdominal ring. Anterior tarsi not armed, tibiae with long hair. Quite a number of chiefly tropical species.

congenitalis. **N. congenitalis** *Hmps.* (= *vellerea* *Drc.* nec *Schs.*) (18 b) has brown forewings suffused with purple grey, with indistinct transverse lines marked by greyish-white scales; the discal area is tinted dark olive-brown from the subcosta to the inner-marginal vein, in which the maculae are surrounded by scanty white scales; behind the postmedian line a somewhat lighter area; the undulate line is composed of small brown spots strewn with white scales in the shape of small, feeble crescentiform spots. Hindwing blackish-brownish with a slight coppery reflection, towards the base lighter. Antennae long-combed. Mexico to Guatemala.

sabatta. **N. sabatta** *Dyar* is very similar, only half as large, the darker discal area and the dark spots of the undulate line with a bronze tint, the transverse lines somewhat lighter with a slight purple tint, rather straight; the large maculae filled up with dark purple grey, in lighter rings, below confluent, the ring-macula oblique. Marginal area dark purple, in it the broad bronze-coloured brown undulate line which forms a projection on the upper median branch. Hindwing dull brownish-grey, veins, margin and discal spot blackish-brownish. Expanse of wings: 27 mm. Mexico (Zacualpan) in September.

clauda. **N. clauda** *Schs.* (= *vellerea* *Drc.* nec *Schs.*) (18 b). Forewing dark brown, strewn with purple grey and whitish, the blackish-brown discal area ends above the inner-marginal vein as a roundish spot; maculae very indistinct, surrounded with grey; undulate line scantily strewn with white on a darker ground. Hindwing blackish-brownish. The ♂ antennae exhibit very short combs. Mexico.

schedogym-nopis. **N. schedogymnopis** *Dyar* is apparently allied to *clauda*, still smaller, dark purple brownish, in the discal area darker, the fine, light-strewn transverse lines enclosing it converge towards the proximal margin the distal line being very much curved inwards at the costal margin; the oblique maculae are surrounded with a light colour and approach each other below at the median; the veins are somewhat lighter than the ground, and so is the irregular undulate line. Hindwing blackish, towards the base lighter with a round dark central dot. Expanse of wings: 25 mm. Mexico (Zacualpan), in November.

furva. **N. furva** *Schs.* (18 b). The light ferruginous brownish ground-colour is dusted with chestnut-red, in the costal-marginal area more purple blackish-brownish; of the same colour is the band before the anterior and behind the posterior transverse line as well as the filling of the maculae which are surrounded with white; the posterior transverse line is chestnut-brown, distally bordered with white, very oblique in its course, straight; undulate line very indistinctly whitish, the veins in the marginal area striped dark. Hindwing yellowish-white, veins and marginal area darkened by a reddish brown. Mexico.

perfurva. **N. perfurva** *Dyar* (18 c) has red-brown forewings with a bronze lustre, postmedianly brightened up by lilac-whitish, forming a flat U in the central half of the costal margin and at the cell-end; collar bordered with a lilac white; anterior transverse line indistinctly double, between the very oblique posterior transverse line and the undulate line which terminates into the apex and being white in the lower half and distally bordered with black, there is a broad blackish band ending pointedly towards the apex; no maculae. Hindwing semi-diaphanous whitish, veins and margin feebly brownish. Antennae with longer combs than in *furva*. From Mexico.

spadix. **N. spadix** *sp. nov.* (18 c) is of a bright ferruginous red with a slight bronze reflection, head and collar reddish-yellow; the basal area scaled somewhat purple brown, the median blackish like the lower end of the reniform macula, surrounded by single light scales, the ring-macula being absent; the anterior double transverse line as in *perfurva*, the posterior line chestnut-red, distally bordered with lilac-white, running as in *furva*, behind it analwards somewhat dusted with blackish; the undulate line consists of lilac-whitish arcuate lines in the lower half, above indistinctly darker, terminating into the apex; fringes purple-blackish. Hindwing semi-diaphanous white, marginal line composed of purple-brownish lunular streaks. Costal margin, veins, and fringes with a copper-reddish reflection. Antennae with short double combs. From Costa Rica (Volcano of Irazu).

camura. **N. camura** *sp. n.* (18 c) is not unlike *perfurva*, but more than twice its size, particularly the ♀. Forewing purple-brownish, strewn with blackish particularly in the costal part of the discal area; the anterior transverse line is single, blackish, on the median flawed almost in an acute angle; no maculae; the posterior transverse line is feebly bent, almost parallel to the distal margin, double, the two lines being separated very far, filled up with violettish-reddish which colour expands towards the apex as far as into the apex; the transverse line itself is at the costal margin much more bent towards the base; undulate line proximally shaded with purple black, behind it the marginal area is light purple grey, behind it a distinct black marginal line; fringes at the base light violettish-reddish, parted by a blackish line. Hindwing whitish, at the margin smoky with a fine dark postdiscal line. Antennae tuftedly ciliated. Colombia (Mt. Tolima), taken by FASSL.

orbicularis. **N. orbicularis** *Zerny* (18 c) has light purple grey forewings dusted with chestnut-red, the median and its branches finely lead-coloured black; transverse lines double, the posterior line very feebly undulate,

maculae finely surrounded with red-brown; a brown median line extends through the reniform macula, being flawed in an obtuse angle on the median, as far as the proximal margin; the undulate line extends straight downwards from the apex and terminates right before the anal angle; it is black, distally shaded with a faded colour. Hindwing of a pure white, semi-transparent, with a fine dark marginal line. Antennae feebly serrate and ciliated. Mt. Tolima and Quindiu Pass (Colombia).

N. differens *Drc.* (= *vellerea Drc. nec Schs.*) (18 d) is very easily recognizable by the contrastingly rusty-brown discal area; the forewing is for the rest deep purple grey, the posterior transverse line is double, filled up with a light wood-coloured brownish, not quite reaching to the costal margin; the undulate line consists of lustrous coppery spots projecting far towards the base on the discal fold. Hindwing brownish, towards the margin darker. Mexico, Costa Rica, Panama. *differens.*

N. noctivaga *Schs.* Forewing violettish-brown, in the discal area between the cell and submedianly tinted bronze, with dark brown transverse lines being on the averted sides bordered with light brown; the ring-macula is large, round, the reniform macula large, both dull lilac-brown, the latter surrounded with dark; the undulate line consists of light bronze-brown crescentiform spots shaded with dark brown; at the ends of the veins very fine white dots. Hindwing brownish-black with darker veins; fringes brownish-black, at the ends whitish with a fine light brownish basal line. Expanse of wings: 37 mm. Costa Rica. *noctivaga.*

N. vellerea *Schs.* (= *cedica Drc.*) (18 d) looks very much like *congenitalis*, but it is easily discernible by light hindwings and plain, ciliated antennae; the discal area, particularly below the cell is darker and terminates above the proximal margin by the connection of the two fine double transverse lines. Hindwing whitish, at the margin feebly brownish. Mexico to Panama. *vellerea.*

N. persimilis *sp. n.* (18 d) looks extremely similar to *vellerea*, but it is larger, of a purer purple grey, without the slight coppery lustre of the preceding; the anterior transverse line is entirely absent, only marked by the contrasting colours of the purple grey basal area and the velvety brownish-black discal area which grows lighter towards the proximal margin; the posterior transverse line is likewise quite extinct, softly bent, parallel to the distal margin, without the whitish indentations on the veins, which are noticed in *vellerea*; behind it a light violettish-brownish area; marginal area darker purple grey, strewn with single white scales which are somewhat more densely strewn in the undulate line and proximally shaded with a slightly darker colour. Hindwing more extensively white than in *vellerea*, the margin but very narrowly brownish. Mexico. *persimilis.*

N. stellans *sp. n.* (18 d) is very much like *differens* in the marking, but whilst in the latter species the discal area is much lighter in contrast with the darker purple grey basal and postmedian areas, the discal area in *stellans* is coppery brown with a deep bronze lustre as in some of our *Plusia (concha)*, the whole marginal area being the same, the rest of the wing of a lighter purple grey; the similarly coloured maculae are below broadly confluent; the transverse lines together form a bent line at the proximal margin and terminate the discal area before the proximal margin, whereas in *differens* it ends broad below at the proximal margin and the transverse lines are not united; the double posterior transverse line is filled up with light; the undulate line exhibits some small whitish lunae at the costal margin and near the anal angle. Hindwing brownish, in the disc semi-diaphanous, on the veins and margin darker. The ♀ is very much darker. Mexico to Costa Rica. *stellans.*

N. oomae *Dyar* (18 d) has quite a different marking, much broader forewings of purple-blackish colour, in some places dark flesh-coloured reddish, particularly at the costal margin between the beginnings of the double dentate transverse lines and in the filling of the postmedian line in its proximal half; we notice the complete Noctuid marking, the large broad coniform macula being surrounded with black, the reniform macula distally pupilled white; undulate line light, fringes crossed by a lighter colour. Hindwing light yellowish-white, at the margin broad brownish-grey with a darker central dot and a transverse line behind it. Mexico. *oomae.*

N. conservulodes *Drc.* (18 c) and the following *dissentanea* represent quite a different type. Forewing golden brown, strewn darker, with grey, indistinct transverse lines, the large purple grey maculae in yellowish-white rings and surrounded with black flow together below, above the coniform macula with an oblique yellowish-white streak. Marginal area behind the yellowish undulate line very light purple grey; in the subterminal area above the upper radial branch a pinkish-grey strigiform spot. Hindwing yellowish-white, on the veins and margin brownish. Colombia. *conservulodes.*

N. dissentanea *sp. n.* (18 b) in its exterior is very much like *conservulodes*, but of a somewhat different structure, unless the small foveolate hollow in the centre of the round, slight convexity of the frons be artificial. Distinguished by its purer purple-grey, not red-brown ground-colour, in the discal and subterminal areas deep purple-brown with a distinct dentate posterior transverse line which is silvery white below the costal margin and above the proximal margin, otherwise distally bordered with purple grey; in the subterminal area beside the subapical light strigiform spot with a white streak below the lower radial branch; the reniform macula is smaller and more slender, on the median proximally confluent with the oblique ring-macula, above the coniform macula with a narrow, white, harpoon-shaped spot. Hindwing white, at the margin smoky. Bolivia (Cuesta de Cillutincara), described according to 1 ♂. *dissentanea.*

N. fluminalis *Dogn.* is still more conspicuously coloured and marked than the preceding, purple-grey, strewn with chestnut-red, with a deep blackish-brown irregular discal spot, towards the costal margin tridentated, towards the proximal margin bidentated, for the greatest part finely bordered with yellowish-

white, with a whitish strigiform spot in it subterminally behind the cell. Hindwing brownish, on the veins and margin darkened. From Colombia (Quindiu-Pass) and Bolivia (Cuesta de Cillutincara), captured by FASSL; the latter specimen exhibits above the absent coniform macula a long silvery white streak dividing the blackish-brown ground almost into two parts: — *albisecta* *form. nov.* (18 c); at least this streak is not mentioned in the description of *fluminalis*, it may possibly be another species.

19. Genus: **Hydroeciodes** *Hmps.*

Rather closely allied to the preceding genus and above all distinguished by the long ciliated eyes; the frons exhibits the same rounded convexity with a horny plate below it. The thorax is covered with scales abundantly intermixed with hair, and the collar is in the centre somewhat keel-shaped; on the vertex the head exhibits a large hair-tuft; all the rest agrees with the preceding genus. To the half a dozen of species enumerated by HAMPSON in his Catalogue there have in the meantime numerous, mostly extraordinarily similar and not easily discernible species from Mexico been added, so that the number of forms known to-day has increased to 35.

Sect. I: Antennae with long double combs.

xanthina. **H. xanthina** *Hmps.* (18 e). Forewing yellow, strewn with brownish-red, with very fine transverse lines, the anterior line double, the posterior single; coniform macula, ring-macula, and reniform macula finely encircled with brown, the latter below distally very little darkened with ferruginous yellow, with a hardly traceable whitish dot in the lower cell-angle; the dark median shade extends in the cell to somewhat below the discal fold, then it turns sharply towards the lower cell-angle, from where it bends in an acute angle obliquely inwards to the centre of the proximal margin; undulate line fine, brown, in the upper half somewhat thicker than below; marginal area, particularly in the ♀, and especially behind the cell somewhat darkened. Hindwing in the ♂ diaphanous whitish strewn with brownish on the veins and margin darker, in the ♀ quite brownish-grey with somewhat more yellowish fringes. Mexico.

mormon. **H. mormon** *Dyar.* Body dark brown. Forewing in the ground ochreous, spotted orange, but so densely dusted dark brown, that only the macular filling and the subterminal area remain yellow; transverse lines fine, blackish; the proximal line cuts the area of the orange coniform macula abruptly, it is angular on the inner-marginal vein, the distal line dentate on the veins; the coniform macula is longitudinally parted by a dark line; ring-macula round, pupilled ochreous, the reniform macula is above proximally and in the centre distally spotted orange, with an oblique white spot in the lower inner angle, distally with 5 roundish, small white spots; the subterminal area before and behind the shaded undulate line is spotted orange-ochreous, the marginal area is darker. Hindwing in the disc ochreous, the discal spot, veins and marginal area shaded with blackish. Expanse of wings: 31 mm. Mexico (Zacualpan) in January.

pepa. **H. pexa** *Schs.* (18 c). Forewing orange, strewn and dusted with red-brown, the least before the anterior transverse line below the cell and postmedianly except the costal part, and with single, undulate, not dentate transverse lines; coniform macula short, yellow, strewn with red and surrounded with brown like the two upper maculae, the ring-macula round, the reniform macula all round spotted white, between both a median line being angular on the median; undulate line in the centre distally bent. Hindwing of a monotonous brown. Mexico.

pexinella. **H. pexinella** *Dyar* (18 e) is smaller than the preceding with narrower reddish yellow spots in the subterminal area. Forewing more extensively brown, only in the maculae and subterminal area yellowish-reddish, the posterior transverse line more distinctly dentate. Mexico (Zacualpan) in August.

ruxis. **H. ruxis** *Dyar* (18 e) is still somewhat smaller and quite monotonously brown without any yellowish red spotting; the proximal transverse line is almost rectangularly flawed on the median: the reniform macula distally with a large, crescentiform, white spot, above it a dot and below it 3 situate in a triangle; the subterminal area is hardly lighter. Hindwing somewhat lighter greyish-brown. Mexico (Zacualpan) in September.

exagitans. **H. exagitans** *Dyar.* In this species the hairing of the palpi in front is longer than generally. Thorax dark brown, abdomen blackish with a light anal tuft. Forewing monotonously brown with somewhat lighter ante- and postmedian bands and maculae with a slightly yellowish tint and finely bordered with black; marginal area slightly darker; ring-macula small, round, reniform macula likewise small, pupilled blackish; the distal transverse line is dentate, also the undulate line though somewhat less. Hindwing grey, in the disc lighter with a feeble discal spot. Expanse of wings: 27 mm. Mexico (City) in June.

aspasta. **H. aspasta** *Dyar* (18 e). Forewing very light yellowish greyish-brown with large, somewhat lighter maculae finely encircled with brown; transverse lines single, dark, almost straight, on the inner-marginal vein dentate, between them a hardly darker median shade; the marginal area is somewhat darker, before it the indistinctly lighter, irregular undulate line. Hindwing diaphanous light grey with a dark discal dot and marginal line. Mexico (Chiapas, Tabasco) in May.

mendicosa. **H. mendicosa** *Dyar* (18 e, f). Light loam-coloured yellowish, dusted with brownish-grey, except the filling of the maculae and the subterminal area, the veins in the distal half strewn with whitish; the anterior

transverse line forms 3 high bows, the posterior line being dentate on the veins with white dots behind it; ring-macula large, round, the reniform macula distally with 3 yellowish white dots and in the lower proximal angle with one; between them a broad, faded discal shade; the undulate line forms below the costal margin and in the centre rather large bows turned towards the margin. Hindwing diaphanous light grey with a darker discal dot and marginal line which is interrupted on the veins. Base of fringes yellowish. Mexico (City), September.

H. piacularis *sp. n.* (18 f). Forewing on the light brownish ground uniformly dusted red-brown across the whole surface of the wing; the proximal transverse line is finely brown, forming two angular bows distally and an acute angle towards the base in the cell on the fold, the posterior line being dentate on the veins; the coniform macula is encircled with brown only in the distal half, the upper maculae are faintly lighter yellowish, finely encircled with brown, the ring-macula a circle, the reniform macula distally very slightly concave, at the distal margin somewhat more distinctly yellow, with a fine, brown, concentric line; the median is in the distal half blackish and strewn with whitish; median line on the lower cell-angle almost rectangularly flawed; the marginal area is hardly darker than the subterminal area, the undulate line parting both forms towards the costal margin a small bow, in the centre a larger bow towards the margin. Hindwing brownish-grey with reddish-yellow fringes. 2 ♂♂ from Mexico (City), taken in September by ROB. MÜLLER. Type in the Coll. DRAUDT. *piacularis.*

SECT. II. ANTENNAE WITH SHORT DOUBLE COMBS.

H. felova Dyar. Here the comb is as long as or somewhat longer than the antennal shaft. Forewing yellow, densely strewn with red-brown, in the distal half dusted with brown, with brown, single transverse lines being dentate on the veins; maculae of the ground-colour, surrounded with a plain brown, the reniform macula with white dots at the angles; the median shade is flawed at the lower cell-angle; marginal area shaded with dark, the undulate line appearing as yellow spots below the apex. Hindwing blackish brown. Expanse of wings: 32 mm. Mexico (Jalapa). *felova.*

H. danastia Dyar (18 f) has the teeth of the antennal comb shorter than the width of the shaft. Forewing yellow, strewn with red-brown and intensely dusted with purple brown, so that the ground-colour remains only in the basal area, the maculae, and subterminally; the transverse lines are but little visible in the dark shading, the median shade being angular at the lower angle of the cell; both the upper maculae exhibit whitish dots in their bordering. Hindwing blackish-brown with lighter fringes. Mexico (Jalapa). *danastia.*

SECT. III. ANTENNAE SERRATE WITH CILIARY TUFTS.

H. zinda Dyar (18 g). Forewing yellow, strewn with red, with fine single transverse lines being dentate on the veins, and a median shade being rectangularly flawed at the lower cell-angle; maculae surrounded with red-brown, the round reniform macula is situated in a dark red-brown shade extending subapically farther towards the costal margin, and exhibits below 3 white dots; the marginal area is uniformly filled up with dark red-brown, and on the middle radial branch it projects pointedly proximad, the veins in it being finely striped dark. Hindwing blackish-grey, tinted reddish at the margin. Expanse of wings: 33 mm. Mexico (Zacualpan) in August. *zinda.*

H. multesima *sp. n.* (18 f) has yellow forewings finely strewn with blackish grey, whereby they exhibit a loam-coloured yellow tinge, only the area of the proximal margin being strewn with somewhat more brownish-red; the subbasal line is red-brown, double; the anterior transverse line forms 3 bows, the two upper ones being large and flat, that below the inner-marginal vein being much higher; all the three maculae finely encircled with brown, the reniform macula with a fine brown concentric line and 2 white dots in the two lower angles and a more yellowish dot above distally; the broad median line is on the subcostal rectangularly flawed distally, on the cellular fold rectangularly flawed proximally and behind the lower cell-angle in an acute angle distally, the space between it and the pointedly dentate postmedian line darkened as a blackish-grey band, the subterminal area again lighter; this is the only species in which the subterminal line appears in the grey marginal area as a uniform, light yellowish, coherent undulate line. Hindwing blackish grey with yellowish fringes. Mexico (City), taken by ROB. MÜLLER in September. *multesima.*

H. catadea Dyar (18 f). Forewing yellow, strewn and dusted with red-brown; the subbasal line extends as a straight brown line from the cell to the angle of the proximal margin, the proximal transverse line is indistinctly double, almost straight, only forming below the inner-marginal vein, like in *multesima*, a bow projecting far distally, the fine distal transverse line is dentate on the veins, the median line is somewhat angular in the cell and forms a very acute angle below the reniform macula; coniform macula only distally surrounded with brown, the upper maculae somewhat lighter yellow, distinctly surrounded with dark brown, without white dots, the dark marginal area terminates on the penultimate subcostal branch obliquely cut off and is here the darkest. Hindwing blackish with reddish fringes. Mexico (City) in October. *catadea.*

H. parafea Dyar is very similar to *catadea* (18 f), smaller, the lines are browner and much less contrasting; the maculae are smaller, the reniform macula below with a white bent spot and a small one in the upper distal angle, pupilled with a red line. Subterminal area yellow, traversed by red veins, marginal area dark brown, with a pointed projection towards the base on the middle radial branch. Mexico (City). *parafea.*

compressipuncta. **H. compressipuncta** Dyar (18 f) is one of the smallest; forewing orange, strewn with red-brown, particularly in the distal area dusted with purple brown; subbasal line double, filled up with orange, the anterior transverse line the same, forming 3 flat bows, the posterior line single, dentate, distally bordered with orange; in the place of the apex of the absent coniform macula a thick black dot; the upper maculae orange, the reniform macula below with 2 or 3 white dots; the yellow undulate line forms below the apex a large yellow spot, below it the marginal area projects very pointedly towards the base. Hindwing blackish-brown. Mexico (Zacualpan) in May and October.

cetebu. **H. cetebu** Dyar (18 f) is quite extraordinarily similar to *compressipuncta*, the antennae somewhat more serrate, with stronger ciliary tufts, of a more slender structure, with narrower wings, on which the orange ground-colour is more prominent, without the purple dusting of the distal part, particularly the yellow subterminal area appears more distinctly as an undulate band; the anterior transverse line forms 3 flat bows; the median line forms on the cellular fold an acute angle towards the base, on the lower angle of the cell a right angle towards the margin; the posterior transverse line is sharply dentate, the teeth being continued as black streaks on the veins as far as the margin; the reniform macula is broader, more square; all the rest as in the preceding species. Mexico (Zacualpan) in April.

Sect. IV. Antennae plain, ciliated.

cirramela. **H. cirramela** Dyar (18 g) in its exterior is very similar to *compressipuncta*, but distinguishable by its larger size and the other antennae; besides the coniform macula is finely encircled with red-brown, and the black dot is absent; the cell and distal half of the discal area are blackish, the upper maculae are distinctly orange; the reniform macula is almost square with 5 white dots distally and one in the lower proximal angle. Hindwing blackish-grey. Mexico (Zacualpan), January and July.

alala. **H. alala** Drc. (18 g). Forewing golden yellow, finely strewn with red-brown, with red-brown transverse lines, the subbasal line and anterior line double, the posterior line single dentate, between both a fine median line being rectangularly flawed at the lower angle of the cell; the 3 maculae are finely encircled with red-brown, with fine concentric proximal lines, behind them some lilac-grey dusting, being somewhat continued towards the apex; the marginal area behind the yellow, spotted undulate line is dusted with lavender-coloured grey. Hindwing light yellowish, towards the margin with a coppery reflection. Mexico (City, Zacualpan), October, November.

anastogia. **H. anastogia** Dyar (= *alala* subsp. 1 *Hmps.*) (18 g) is very similar to *alala*, dusted much darker, particularly in the distal half of the wing, and more intensely marked; a very distinct oblique subbasal line extends from the angle of the proximal margin almost to the ring-macula; the reniform macula below with 3 thick white dots; also the hindwings are much darker brownish-grey with coppery reddish fringes. Mexico (Orizaba, Zacualpan), July.

tintebela. **H. tintebela** Dyar (18 g) is the species bearing the most contrasts, of a dark orange colour, in the marginal area and between the maculae darkened with almost purple black, turning coppery towards the fringes, the reniform macula without white dots. Very conspicuous are the coppery hindwings with lighter fringes. Mexico (Zacualpan), October and December.

ritaria. **H. ritaria** Schs. Forewing dark red, the extreme costal margin and the veins as well as the postmedian shade between the lower median and middle radial branch greyish black; basal area of a bright yellow, in it the undulate red subbasal line; the anterior transverse line is undulate, at the costal margin and below the cell towards the base marked yellow, the posterior line dark, likewise undulate, between both an indistinct dark median line; the ring-macula is a small, yellow, round spot, the reniform macula is yellow, strewn with red, below bordered with white; a subterminal row of black dots distally pupilled yellow, particularly in the upper half. Hindwing of a silky dark brown with lighter fringes. Expanse of wings: 28 mm. Mexico (Orizaba) and Guatemala.

impica. **H. impica** Dyar is on the forewing dark ochreous, densely strewn with red-brown, in the discal area dusted with blackish, in the marginal area monotonously dark brown; the proximal transverse line is dark brown and forms 3 bows, the distal one is dentate on the veins, between them a blackish median shade, being angular in the cell; maculae large, light, all 3 rounded, the reniform macula with a bent red line in the centre, bordered by yellow, partly confluent spots; the undulate line is only marked by the contrast of the two colours. Hindwing of a dingy whitish, veins and margin dark brown with reddish fringes. Expanse of wings: 33 mm. Mexico (Zacualpan) in December, described only according to 1 ♀, for which reason its position is not easily to be defined.

azteca. **H. azteca** Schs. (18 g, h) has orange forewings densely strewn with brownish-red, with finely brown striped veins; the single brown transverse lines are on the averted sides bordered with yellow, the posterior line being very little dentate; very conspicuous is the thick median line extending almost straight from the reniform macula to the proximal-marginal end of the anterior transverse line; in the margining of the upper maculae yellowish or white dots; marginal area and proximal margin darkened with purple brown. Hindwing ochreous-grey with reddish fringes. Mexico, widely distributed.

traversa. **H. traversa** Dyar (18 h) is very similar, smaller, of a much brighter red, strewn with ochreous, without the coniform macula, the upper maculae without white dots, the hindwing somewhat lighter and more reddish. Mexico (Orizaba, Jalapa).

mulleri. **H. mulleri** sp. n. (18 h) is a small, very conspicuous species owing to the very abrupt greyish-brown marginal area, only apically there remains a small yellow spot; ground-colour otherwise ochreous-yellow,

strewn more olive-brownish, with single brown transverse lines, the anterior line composed of 4 bows, the smallest in the cell, the posterior line irregularly dentate; the blackish-grey median line extends slightly bent to the lower end of the reniform macula whence it bends in an obtuse angle to the proximal margin which is darkened brownish-grey; no coniform macula, the upper maculae rather small, in somewhat lighter rings and finely encircled with brownish. Hindwing very dark blackish-grey with ochreous-yellowish fringes. Based upon 1 ♀ from Mexico (Zacualpan), having been taken in May, and named according to Mr. ROBERTO MÜLLER of Mexico, who discovered so many new Noctuids. As only the ♀ is known, nothing certain can be said about the antennae of the ♂.

H. cauta Schs. (18 h) has dark brown forewings dusted with fiery red, with dark, single, undulate transverse lines and with a small, yellowish-white reniform macula pupilled fiery red, the other maculae being absent; the undulate line is red, proximally shaded with dark; hindwing blackish-brown with a yellowish tint and light fringes. Costa Rica. *cauta.*

H. leucopis Hmps. (18 h) is extremely similar, different by the presence of the small brown ring-macula which is spotted whitish, and the round, purely white reniform macula showing a small brown pupil; the undulate line is indistinct light. Hindwing ochreous-brownish. From Peru. *leucopis.*

H. lepida sp. n. (18 h) is very closely allied to the two preceding species. Forewing on its orange-ochreous ground densely dusted with red-brown; of the two double transverse lines the lines facing each other are thickened red-brown, the distal ones being feeble, light reddish, the median line indistinct; the ring-macula is a small horizontal oval, tapering towards the base, yellowish, the reniform macula of a pure white, very finely pupilled dark; the veins in the discal and marginal area are black, strewn with white; undulate line yellowish, proximally bordered with red-brown. Hindwing diaphanous white. — In **flavostigma** form. nov. (18 h) the reniform macula is yellow instead of white. From Colombia (Pacho). *lepida.* *flavostigma.*

H. compulsa sp. nov. (18 h) is very similar and perhaps not a separate species, considerably larger, not so fiery red with a smaller, purely white, not pupilled reniform macula and brownish-grey hindwings with a darker marginal band. According to 1 ♂ from the Quindiu Pass (Colombia), taken by FASSL. *compuls.*

H. leucogramma Hmps. (18 i) differs from the preceding by the white, but slightly curved undulate line. Forewing purple pink with blackish-brown veins, behind the cell suffused with blackish-brown, in the proximal part more yellow, strewn with fiery red; the maculae are yellow, strewn with fiery red, the reniform macula below and distally dotted white. Hindwing blackish-brown. Brazil to Paraguay. *leucogramma.*

H. pyrastis Dogn. (18 i). Forewing golden yellow, thickly strewn with fiery red, with a narrow blackish-brown costal margin and proximal margin, and a broad similar marginal area; of the same colour are the markings, the transverse lines are double, between them a thick median line forming an obtuse flaw at the proximal lower end of the reniform macula; the maculae are rather small. Hindwing brownish-grey, towards the base lighter. Peru and Colombia. *pyrastis.*

H. marcona Schs. has dark brown, lustrous silky forewings, in the discal area and at the margin shaded blackish, with fine black transverse stripes being bordered with a lighter colour on the averted sides, the posterior line being dentate; the upper maculae are white, the ring-macula pupilled with a cinnamon-brown colour, the reniform macula in the middle strangulated with a cinnamon-brown line in the centre; undulate line dentate. Hindwing blackish-grey. Expanse of wings: 35 mm. Guatemala (Volcano of Sta. Maria). *marcona.*

H. pothen Dyar. Forewing reddish-brown, in the basal half more reddish; transverse lines extinct, the proximal line and the median line appearing as dark shades, the distal line likewise, distally bordered with white, on the veins dentate; no maculae except an indistinct, white dusted spot instead of the reniform macula; behind the broken yellowish undulate line the marginal area is dark; across the wings single white scales are scattered, forming 4 white dots in the distal part of the costal margin and likewise white dots at the ends of the veins. Hindwing diaphanous grey with darker veins, discal spot and marginal line. Expanse of wings: 27 mm. Mexico. *pothen*

H. rectilinea Dyar is a very different species with light purple forewings, with a dark bronze reflection in a large spot at the distal margin; all the markings entirely extinct except the straight, white distal transverse line which is proximally bordered with a fine dark line. Hindwing whitish, distally dusted with a purple grey. Expanse of wings: 29 mm. Mexico (City), taken by ROB. MÜLLER. *rectilinea.*

20. Genus: **Eumülleria** Dyar.

It is the most closely allied to the genus *Hadena* (vid. p. 113), but without any abdominal tufts. The large, round, hairy eyes are not ciliated, the frons is only rounded, without a projection; the thorax is covered with narrow scales. Only 1 species:

E. cliopis Dyar. Forewing dark purple brown, uniformly marbled with blackish spots representing the fragments of the normal Noctuid marking; at the base of the costal margin there is a light dot, the proximal transverse line is represented by an angular spot, the distal line by a dot, besides 3 subapical ones; coniform macula small, black, the circular black ring-macula is surrounded with olive-yellow, like the large reniform macula, which is distally straightly not concavely defined; the olive-yellow, distinct undulate line is subcostally *cliopis.*

and on both folds proximally angled. Hindwing brownish-grey with a feeble discal dot. Expanse of wings: 29 mm. From Mexico.

21. Genus: **Tiracola** Moore.

Proboscis developed, palpi erect, the middle joint thickly scaled, the terminal joint short; frons smooth, without projections. The thorax is clad with hair and scales, it exhibits in front a triangular, keeled tuft, on the metathorax a loose tuft. Abdomen somewhat flattened, at the base roughly haired, on the first rings above with small tufts. Beside the typical, almost cosmopolitan *plagiata*, two more, entirely different insects have been inserted here of late.

plagiata. **T. plagiata** Wkr. has already been briefly mentioned in the palearctic volume and dealt with at large and figured in the Indo-Australian volume (p. 73, 74; t. 9 h). In the neotropical region of Mexico it is distributed as far as Paraguay and common, and if possible still much more variable than in the Indian region. The forms mentioned from there: **nebulifera** Warr. (Vol. II, t. 9 h, i) and **uniformis** Warr. (Vol. XI, t. 9 i) also occur in America, likewise with a reddish under surface. — Particularly common is a type with a chestnut-brown median and marginal area and an ochreous-yellowish basal and subterminal area, which I denominate **mediosuffusa** form. nov. (18 i), and an almost unmarked reddish-brown type with a large purple-brown post-discal spot showing light veins: **magniplaga** form. nov. (18 i). — It is of no use to denominate other forms, though there might be 20 or more exhibiting all stages of transition without a distinct delimitation. — The dull violet-fish-brown larva with triangular grey dorsal spots and a light olive-brownish sublateral stripe lives on Emilia.

lilacea. **T. lilacea** Dogn. Forewing light violet, scantily strewn with dark atoms, with oblique black costal-marginal streaks from which the transverse lines proceed which, however, are scarcely prominent in the ground-colour, the two middle streaks being situate above a large reniform spot, the first obliquely extending to the lower cell-angle, behind the second a white costal-marginal spot; reniform macula black and olive; the posterior transverse line consists of a row of double black dots on the veins with one white dot each between them; also the white undulate line being in the centre distally angular is in front and behind shaded with a blackish and olive colour; fringes distally speckled black and white. Forewing brownish, towards the base and at the proximal margin whitish. Expanse of wings: 36 mm. Described according to 1 ♂ from the Quindiu Pass (Colombia, Rio Toche).

nonconformens. **T. nonconformens** Dyar. Forewing dark brown, finely strewn with white, all the markings extinct except the small round yellowish-brown reniform macula and the light undulate line being removed close to the margin and being distally bordered with a darker colour and subcostally expanded; of the posterior transverse line there appears a dark brown arcuate line between the proximal-marginal vein and the lower median branch. Hindwing dark brown, as dark as the forewing, only towards the base and on the fringes somewhat lighter. Expanse of wings: 31 mm. Mexico.

22. Genus: **Admetovis** Grt.

Two species recalling the palearctic species of *Phalera* in their colouring and marking, with oblong forewings exhibiting a dentate distal margin. In the structure they agree rather well with *Tiracola*, but the prothorax is without the keeled tuft and the abdomen exhibits but one tuft on the first segment.

oxymorus. **A. oxymorus** Grt. (18 i) is an easily recognizable species, the forewing in the proximal half dark grey, dusted with white, with rather indistinct markings, behind the reniform macula yellowish-white with 2 dark triangular marginal spots; coniform macula distinct. Hindwing densely dusted with yellowish-brown. From Arizona and Southern California.

similaris. **A. similaris** Barnes (18 k) is very similar, but at once recognizable by its entirely white, semi-diaphanous hindwings; the ground-colour of the forewing is a uniform iron-grey without the whitish dusting, with more distinct black transverse lines, without the coniform macula; the posterior transverse line is behind the cell more distally bent, at the proximal edge of the anterior line more approximated than in *oxymorus*; the lower marginal triangular spot extends farther towards the base. Arizona, California.

23. Genus: **Lophoceramica** Dyar.

Allied to the genus *Ceramica* from which it differs by the admixture of scales on the thorax, the ♂ antennae being doubly combed, and the ♀ exhibiting a large, woolly anal tuft; the palpi are somewhat longer.

artega. **L. artega** Barnes (= pallicauda Sm.) (18 k) has red-brown forewings powdered with whitish, with rather inconspicuous markings except the reniform macula being distally spotted white, which, however, may in the ♂ also be marked without white; transverse lines double, dentate, filled up with a somewhat lighter colour, between them a brownish-red median shade; the light undulate line is faded, proximally shaded somewhat darker, the veins in the marginal half marked darker; fringes at the base yellowish-white, distally darker, the ring-macula is a round, small, yellowish spot. Hindwing brownish-grey with light fringes. The anal tuft

of the ♂ is yellowish-brown, the anal wool of the ♀ white. Arizona, in August.

L. pyrrha Dyar (18 k) is very similar, somewhat smaller, at the proximal margin almost purely *pyrrha*. white like the base of the fringes, the veins in the marginal area powdered with whitish like the costal margin; the ring-macula is a chestnut-red circle, the median shade is blackish; the hindwing is somewhat lighter. From Mexico. — **simplicifac**ta Dyar (18 k) is only a form without any white in the reniform macula which represents *simplicifac*-*ta*. an oblong, rust-brown streak; in transitions to this form there are white scales interspersed in the surroundings.

24. Genus: **Chabuata** Wkr.

Characterized by a somewhat keeled tuft on the prothorax, the short last joint of the palpi, a loose tuft only on the first abdominal ring, the thorax being only clad with hair and hair-like scales, and a smooth frons without any convexity. The genus contains very different insects, partly large tropical species with long-combed, serrate or plain antennae; the wings with a smooth or also notched distal margin.

Sect. I. Antennae combed.

Ch. elsinora Barnes (= *erebus* Sm.) (18 k). Forewing very dark blackish-brown, with a delicate *elsinora*. purple tinge and coal-black markings which, however, are little prominent on the dark ground; transverse lines dentate, in some places double, filled up with a somewhat lighter colour, between both a narrow median shade ending at the proximal margin near the anterior transverse line; coniform macula filled up with black, the ring-macula finely encircled with black, inside of which it is finely ringed yellowish, the reniform macula is bordered with black spots, in the distal half filled up with yellow, sometimes also in its whole width; undulate line formed of yellow scales mixed with black ones, with 2 black sagittae behind the cell, which extend to the reniform macula. Hindwing bordered with a broad blackish brownish-grey, towards the base lighter with a distinct discal spot. Arizona, Mexico.

Ch. palmillo Barnes (18 l) is similar, but much lighter, forewing yellowish brown, darker, shaded *palmillo*. with purple, with rather indistinct transverse lines, the posterior line dentate, the undulate line only marked by a darkened area before it, the veins in the marginal area darkened; ring-macula finely encircled with dark, the reniform macula strangulated in the centre, in a dark ring, inside of which there is another concentric ring, the coniform macula being likewise encircled with dark. Hindwing light yellowish-white with somewhat darker fringes. South Arizona.

Ch. signata Wkr. (= *semiaperta* Morr.) (18 l). Red-brown with darker striped veins and fine, undu- *signata*. latedly dentate, single transverse stripes; the upper maculae are surrounded with brown, the ring-macula is small, round, the reniform macula narrow, below often bordered with white and above spotted white, between them a dark median shade which is angular at the lower cell-angle; undulate line faded ochreous-yellowish, the marginal area behind it darker, the veins on it more or less dusted with whitish. Hindwing dark reddish-brown. From Canada to New Mexico.

Ch. notata Streck. (= *syriassa* Streck.) (18 l). Forewing bright purple reddish-brown, strewn with *notata*. white, with indistinct, finely dentate transverse lines and median lines; the coniform macula and ring-macula are absent, the reniform macula is white, in the centre and upper half tinted yellow, with 2 fine red-brown streaks on the discal fold, the surroundings somewhat darker, the undulate line only discernible owing to the darker defined marginal area. Hindwing dull yellowish-brown with more reddish fringes. United States (Illinois, Nebraska).

Ch. baranea Barnes (18 l). Forewing reddish brownish-grey, more or less strewn with a lighter colour, *baranea*. particularly on the feebly darkened veins, the dentate single transverse lines rather inconspicuous, between them a somewhat stronger median shade, obliquely to the lower end of the reniform macula and from there to the centre of the proximal margin. Discal area and marginal area slightly darker, basal and costal areas somewhat more intensely strewn with light; coniform macula and ring-macula are quite faded encircled with a darker colour or entirely absent, the reniform macula is filled up with reddish and distally bordered by 4, proximally by 2 or 3 small white spots, the distal ones being much stronger, and the second from above twice as large as the others or also bipartite; the undulate line is somewhat darker than the ground. Hindwing brownish-grey, distally whitish. From Texas.

Ch. fistula Harv. (= *ulamora* Sm.) (18 l) is somewhat similar, dull reddish-brown, dusted with grey, *fistula*. the latter particularly in the costal-marginal and proximal areas; transverse lines fine black and rather little prominent, the posterior line dentate; coniform macula and ring-macula likewise finely encircled with dark; reniform macula distally a white crescent of single small spots with one in front at the lower end. Undulate line brown with faint, small ochreous-yellowish spots; on the ends of the veins there are white dots. Hindwing whitish, dusted with brown in the marginal area, in the ♀ darker. Colorado and California.

- calva.* **Ch. calva** *sp. n.* (18 l) forms the transition between *fistula* and *mutina*; it is reddish-grey with a slight litharge lustre, in the basal area at the proximal and costal margins strewn with greyish-white; the transverse lines as well as the ring-macula and coniform macula like in *fistula* little prominent, very fine, the posterior line dentate; the reniform macula is oblong-oval, orange-yellow, below there are 3 small thick white spots annexed in the shape of a trefoil-leaf; undulate line formed of single, scattered, blackish small scales. Hindwing brownish-grey. According to two couples from Mexico (Tehuacan, Puebla), taken by R. MÜLLER in September; type in the Coll. DRAUDT. — In the form **apyrina** *form. nov.* (18 l) the 3 white dots are absent in the lower half of the reniform macula; according to 1 ♂.
- mutina.* **Ch. mutina** *Schs.* (19 a) is similar to *calva*, dull brown, equably densely and coarsely strewn with white, so that the markings are almost entirely covered and generally only to be discovered with a lens, the posterior transverse line is, if it is distinct, less dentate than in the preceding; reniform macula in the upper part yellowish-white, often divided by 1 or 2 transverse lines of partition and below with 3 thick white guttae in the shape of a trefoil-leaf as in *calva*, of which one or the other may also be absent; undulate line lighter than the ground. Hindwing whitish with brown veins, marginal and discal spot. Mexico (Orizaba). — In *andabata* **Ch. andabata** *form. nov.* (19 a) the whole reniform macula is absent with the white spots.
- rectinubila.* **Ch. rectinubila** *Dyar* (= ♂ *mutina* *Hmps.* pro parte) (19 a). Forewing dull greyish-brown, densely and coarsely strewn with white with similar transverse lines as in *mutina*, the posterior line entirely undentated and behind it a lighter band extending downwards directly from the apex and ending right in front of the proximal angle; anterior transverse line double, almost straight, both lines separated afar, filled up with a slightly lighter colour; instead of the reniform macula only an insignificantly lighter streak on the transverse vein. Hindwing brownish-grey, towards the margin somewhat darker. Mexico (Orizaba, Zacualpan). I presume that HAMPSON'S description and figure of the ♂ of *mutina* refer to *rectinubila*.
- griseago.* **Ch. griseago** *Dyar* is very similar, smaller, light grey, strewn with whitish, all the markings quite extinct with a whitish, faded, indistinctly double shade extending from the apex to the distal quarter of the proximal margin, behind it a dark shade, the marginal area somewhat darker; at the cell-end a lighter spot. Hindwing grey, in the disc lighter. Expanse of wings: 28 mm. From Mexico (City), taken in July by R. MÜLLER.
- iota.* **Ch. iota** *Dyar* (19 a) looks almost exactly like *Hydroeciodes ruxis* (18 e), but the colour is somewhat darker, more violettish chocolate-brown, the transverse lines are clearer and more distinct, the posterior line is slightly bent, quite undentate. Mexico (Zacualpan).
- sygclela.* **Ch. sygclela** *Dyar* is loam-coloured brown, dusted with reddish-brown, the costal margin and the filling of the indistinct double transverse lines somewhat lighter, in the narrow marginal area and the fringes blackish; at the base a blackish longitudinal ray, the ring-macula is light with a black central dot, the reniform macula narrow, elliptic, encircled and pupilled with black, distally white with a continuation at the middle radial branch. Hindwing dirty whitish, on the veins and apical border broadly blackened: Expanse of wings: 24 mm. Mexico (Zacualpan) in September.
- chipeta.* **Ch. chipeta** *Barnes* (19 a) is very closely allied to *fistula* (18 l); it is distinguished by the white spots of the reniform macula; the distal part is straighter in its course, and from the lower part a continuation runs on the median proximad sometimes to below the ring-macula where it ends pointed, being above and below distinctly defined with black; moreover the coniform macula is distinctly surrounded with dark, the ring-macula proximally pointedly extended; the cell is usually filled up with a somewhat darker colour. From Colorado.
- endiva.* **Ch. endiva** *Sm.* (19 a) resembles *chipeta* in the marking, but it is somewhat smaller and much darker, the markings are much more extinct and the white continuation of the reniform macula is much shorter. Arizona and New Mexico. — In *vespera* **Ch. vespera** *Barnes & Lindsey* the white marking of the reniform macula is absent and replaced by black scales.
- inconspicua.* **Ch. inconspicua** *Grt.* (= *pectinicornis* *Sm.*) (19 b). Forewing deep smoky brown, strewn lighter, with rather inconspicuous brown transverse lines; ring-macula small, round, reddish-brown, encircled with black, with or without a black pupil, the oval reniform macula is in the distal half white, in the proximal half reddish, both colours separated by black scales; coniform macula indistinct. Hindwing brownish-grey, towards the base whitish with reddish fringes. Arizona. HAMPSON'S figure of this species is incorrect.
- velutina.* **Ch. velutina** *Sm.* (= *lutina* *Sm.*) Forewing yellowish reddish brown, on the proximal-marginal vein striped purple brown with light yellowish transverse lines, the posterior line on both sides bordered with a darker brown; the ring-macula is encircled with yellowish, the reniform macula oblong black, laterally bordered with yellow; the irregular yellowish undulate line is proximally bordered by minute indistinct brown spots; marginal area lighter, fringes ferruginous red. Hindwing semi-diaphanous light pinkish-reddish, in the marginal area dusted with a brownish grey, fringes speckled pink and brownish-grey. Expanse of wings: 39 mm. Described from Florida.
- nephroleuca.* **Ch. nephroleuca** *Jones* seems to belong to this place according to the description, but unfortunately the formation of the antennae is not mentioned. Forewing brown, in and below the cell dusted with a darker

purple brown with indistinct double undulate transverse lines, the distal part of the posterior line only composed of dots on the veins; ring-macula light brown, encircled with black, instead of the reniform macula there is at the cell-end a large, oblique, light grey spot, in front and behind shaded with dark; before the light undulate line there are 3 black wedge-shaped spots behind the cell, above it a light triangular apical spot. Hindwing monotonously brown. The ♀ is darker. Expanse of wings: 33 to 35 mm. Brazil: Castro (Paraná).

Sect. II. Antennae serrate-dentate with ciliary tufts.

Ch. carneago Gn. (= *fulva* Blch.) (19 b). Forewing deep red-brown, dusted with purple grey and strewn with brown and black, on the veins striped black, with darker undulate transverse lines, the posterior line double, and with an oblique median line; the ring-macula is a black dot, the reniform macula is blackish encircled with grey, with dark dusting above it to the costal margin. Undulate line brown, at the costal margin expanded like a spot. Hindwing white, veins and margin dusted with purple brown, fringes red or ochreous-yellowish. Chile. *carneago.*

Sect. III. Antennae plainly ciliated.

Ch. chionosema Hmps. (19 b) has red-brown forewings, in the basal half fiery red and ochreous yellow, postmedianly fiery red, at the proximal margin and in the marginal area purple, the transverse lines in front double, behind single, dentate with a yellow spot at the costal margin; coniform macula red, at the end surrounded with brown, the upper ones fiery red mixed with yellow and surrounded with brown, the reniform macula distally and below bordered by purely white dots and streaks; undulate line brown, distally scaled yellow. Hindwing ochreous-yellow, veins and marginal half dusted with brown, the margin itself tinted purple with ochreous-yellow fringes. Expanse of wings: 44 mm. Peru. *chionosema.*

Ch. ociosa Dogn. (19 b). Forewing yellowish-grey, faintly tinted reddish, strewn with black, with double transverse lines, behind the distal line a row of dots on the veins; all the 3 maculae small, surrounded with black, behind the reniform macula 3 small white spots encircled with black; the light grey undulate line is on both sides bordered by black dots, the marginal area behind it is darker. Hindwing light, with darker veins and marginal area. Ecuador (Loja). *ociosa.*

Ch. poliosigma Jones has olive-brown forewings dusted with red-brown, with rather indistinct, single dark transverse lines; instead of the ring-macula there are 2 small grey dots, the reniform macula is light grey, distally finely bordered with black and all round shaded with dark; behind the distal transverse line there is a double row of black dots on the veins; behind the light brown undulate line a dark nebulous stripe, above it a triangular, dark costal spot. Hindwing brown with reddish fringes. Expanse of wings: 42 mm. Brazil: Castro (Paraná). *poliosigma.*

Ch. subsocia Wkr. (19 b). Forewing light greyish-brown, strewn darker, with indistinct double transverse lines, 2 brown dots before the anterior line, the posterior line being dentate with black dots on the veins behind it; the ring-macula and coniform macula are absent, the reniform macula is narrow with parallel lateral margins, above open, in a light ring and with a brown central streak, below with a black pupil; the light undulate line is on both sides bordered with brown, above the anal angle with a black spot. Hindwing brownish-grey with yellowish fringes. Brazil. *subsocia.*

Ch. phaeozona Jones is on the forewing light brown with 2 dark violettish-brown bands, the first between the subbasal and anterior transverse line, the second between the posterior transverse line and undulate line, also the median and its branches being violettish-brown as far as the undulate line; the ring-macula is lighter with a dark brown dot in the proximal upper angle, the undulate line also light with a dark two-pointed spot at the lower cell-end, which touches the median; at the base of the cell there is likewise a dark spot, between the maculae a faded median shade. Hindwing brown, at the apex darker, at the costal margin iridescent ochreous-yellowish. Expanse of wings: 43 mm. Brazil: Castro (Paraná). *phaeozona.*

Ch. albirena Gn. (19 c). Forewing purple reddish brown with dark transverse lines, a dark shaded before the anterior line; in, below and behind the cell-end a large dark spot with a triangular white reniform macula in it; from the lower cell-end a dark median line runs to the proximal margin; the undulate line is composed of a row of white dots with a black sagitta before it above the middle radial vein; fringes pinkish reddish. Hindwing ochreous brown, towards the base lighter with pink fringes. Brazil (Novo Friburgo). *albirena.*

Ch. fuscipaga sp. n. (19 c) is similar to *albirena*, but smaller, with more pointed forewings and without any reniform macula in the large dark cellular spot, the undulate lines without black sagittae. Hindwing towards the base and at the proximal margin much lighter. On the under surface the forewing exhibits distally to the blackish basal part a large subanal area of deep claret-coloured modified scales which are absent in *albirena* where the whole surface of the wing is light red-brown. One ♂ from Brazil (Sta. Cruz). *fuscipaga.*

Ch. ampla Wkr. (19 c). Forewing blackish-brown, dusted with a silvery grey, with rather indistinct transverse lines, the posterior line only composed of a double row of black dots on the veins; the round ring-macula is hardly visible with a deep red dot at the upper end, the reniform macula is an ochreous-yellow spot with dots above it and below it, and deep red scales at the edges; undulate line marked by red dots. Hindwing brownish-grey with yellowish-white fringes. Brazil. *ampla.*

- major.* **Ch. major** *Gn.* (= *maja* *Wkr.*) (19 d) has dull red-brown forewings more or less dusted with grey or purple, with double transverse lines, the posterior line dentate with black dots behind it; between the grey-ringed maculae a shortened median shade, the reniform macula with or without 4 white dots at the angles; the light undulate line subapically with one or two small black spots and with or without small grey and black sagittae on the proximal side. Hindwing blackish-brown with a yellowish tint. Brazil to Paraguay and Argentina.
- crenilinea.* **Ch. crenilinea** *Hmps.* (19 c). Forewing purple red, at the costal margin dark brown, subbasally and instead of the anterior transverse line black dots, the posterior line dentate with black dots on the veins behind it; instead of the ring-macula a white dot, instead of the reniform macula in each angle of the cell one small dark spot, in the lower angle a dark small spot with 2 fine white dots distally; the undulate line consists of small blackish spots between the veins and a hazy larger spot above and below the middle radial branch. Hindwing blackish-brown, towards the base lighter with purple red fringes. Expanse of wings: 48 mm. South-Eastern Peru.
- rectilinea.* **Ch. rectilinea** *Hmps.* (19 d). Forewing dull reddish-brown, thickly strewn with ochreous-brown, with ochreous-yellowish transverse lines, with black dots behind the distal line, behind it tinted purple; the upper maculae are finely encircled with ochreous, the reniform macula also distally filled up with ochreous; before the yellowish undulate line black dots, the marginal area behind it thickly dusted with ochreous. Hindwing blackish-brown, fringes reddish. Argentina.
- albimargo.* **Ch. albimargo** *Gn.* (19 d). Forewing grey, dusted with red-brown and strewn with dark brown, with a white proximal margin, the anterior transverse line proximally bordered with whitish, a double posterior transverse line filled up with grey, with dark dots on the veins behind it, and light-striped veins in the marginal area; maculae large, in white rings, with a dark median line between them; the yellowish undulate line is proximally bordered with red-brown. Hindwing blackish-brown with yellowish-white fringes. Brazil.
- erythrias.* **Ch. erythrias** *Drc.* (19 d). Forewing dark red-brown with a grey spot at the cell-end; distal margin black with a light marginal line. Hindwing dark brown, towards the base lighter. Expanse of wings: 38 mm. South-Eastern Peru, Bolivia. — **inversa** *form. nov.* (19 b) has on the contrary light brownish forewings with a blackish reniform macula, fine darker double transverse lines, the posterior line composed of dots on the veins.
- ochrias.* **Ch. ochrias** *Jones* has light ochreous-brownish forewings with indistinct double transverse lines with lighter fillings, the distal part of the posterior line only composed of dots on the veins; a Y-shaped median band contains the reniform macula; before the undulate subterminal line a darker nebulous band growing lighter towards the posterior transverse line. Hindwing brown. Expanse of wings: 41 mm. Brazil: Castro (Paraná).
- nictitans.* **Ch. nictitans** *Jones*. Forewing lustrous violettish-brown with double transverse bands with lighter fillings, being subcostally acutely angled, behind the posterior band black dots on the veins. Undulate line proximally ochreous-yellow, distally black, with a blackish-brown spot on the discal fold; discal area darker; maculae yellowish-white, dusted with brown, the lower end of the reniform macula pupilled brown, both connected by a bent, fine, yellowish-white submedian line. Fringes undulate. Hindwing dark brown. Expanse of wings: 42 mm. São Paulo.
- noctuiiformis.* **Ch. noctuiiformis** *Hmps.* (*Gn. i. l.*) (19 e) is the largest species, light purple brown, strewn darker with double transverse lines, the posterior line dentate; maculae encircled with yellowish-white, the narrow reniform macula oblique, with a black dot in the lower end; subterminal area as far as the dark undulate line darkened, the latter with a dark spot subapically. Hindwing brownish-grey with yellowish fringes. Brazil.
- associata.* **Ch. associata** *sp. n.* (19 e) is smaller and with narrower wings than *noctuiiformis*, more ochreous-brown, in the basal half and at the costal margin olive-ochreous with rather indistinct double transverse lines; the maculae of the ground-colour, very finely encircled with ochreous-yellow, the reniform macula without a dark pupil, the subterminal area not darkened, with a circular black spot above the middle radial branch; in *noctuiiformis* the black, much smaller spot is situate above the upper radial. According to 1 ♂ from Sta. Cruz (South Brazil); type in the collection of the Senckenberg Museum (Coll. SEITZ).
- satellitoides.* **Ch. satellitioides** *Gn.* (19 e). Forewing purple grey with 3 dark brown transverse bands and 2 fine lines between them; no maculae except 2 quadrangular yellowish-white spots representing the reniform macula; behind the undulate line a row of grey dots before the margin. Fringes like in the preceding rather strongly dentate. Hindwing reddish-brown. Brazil (Novo Friburgo).
- dulcinea.* **Ch. dulcinea** *Btlr.* (19 e) is a much smaller species with undentate fringes. Forewing light red-brown, strewn with purple, with double transverse lines filled up with grey, behind the posterior line with black and white dots on the veins; the maculae are in yellowish or whitish rings, the reniform macula below pupilled blackish, between both with a faded median line; the ochreous-yellowish undulate line is proximally bordered with red-brown. Hindwing blackish-brown with reddish fringes. From Chile.

25. Genus: **Hyssia** Gn:

Very closely allied to the preceding genus and chiefly distinguished by the loose, not keeled tuft on the prothorax.

Sect. I. Antennae of the ♂ combed.

H. nephrosticta Dyar (19 e, f). Forewing brownish-grey with black, double transverse lines with somewhat lighter fillings, the maculae inclusive of the coniform macula finely encircled with black, the reniform macula filled up with small white spots; through the darker shaded marginal area runs the dark undulate line. Hindwing in the ♂ whitish, in the ♀ brownish-grey, at the margin darker. From Mexico (Tehuacan, Puebla), taken in September by ROB. MÜLLER. *nephrosticta.*

H. stigmatosa Dyar (19 e) has in the ♂ likewise combed antennae. Forewing grey with coppery reddish lustre, strewn with purple grey, with rather indistinct double transverse lines, darker maculae in broad light rings and finely encircled with black, the very large coniform macula being likewise encircled with black. Undulate line somewhat lighter, very irregular, proximally darker. Hindwing brownish-grey. Mexico. *stigmatosa.*

Sect. II. Antennae serrate and with ciliary tufts.

H. senatoria Sm. (19 f). Forewing greyish-brown, dusted with dark brown except the marginal area, with double lighter filled anterior and single, finely dentate posterior transverse line; the maculae are finely encircled with black, the reniform macula whitish, pupilled brown and towards the base concave, between them a finely undulate median line; the light undulate line exhibits proximally small black sagittae; in the marginal area above and below the middle radial faded black longitudinal stripes. Hindwing greyish-brown, towards the base lighter. From Arizona. *senatoria.*

H. pseudochroma Dyar (19 f). Forewing reddish ochreous, finely strewn with brown, with faint brown transverse lines, the posterior line long-dentated, with a brown median shade and a black spot at the lower end of the reniform macula; the fine yellowish undulate line is proximally shaded with dark. Hindwing blackish with darker veins and median shade. Mexico, Zacualpan. *pseudochroma.*

H. hampsoni *nom. nov.* (= *sminthistis* Hmps. 1913 nec 1905). Forewing lustrous blackish-brown, dusted with grey and strewn with scanty white scales, with single black transverse lines, the posterior line dentate. Maculae absent, instead of them there are behind the cell-angles small spots of long white scales; of similar small spots the undulate line is composed, and proximally they are bordered with black; at the base of the fringes an ochreous-yellow line. Hindwing dark brown, towards the base lighter. Fringes like on the forewing. Expanse of wings: 44 mm. Described from Peru (Acopampa). *hampsoni.*

Sect. III. Antennae plainly ciliated.

H. griseata Hmps. Forewing purple grey, strewn with dark brown, with indistinct blackish transverse lines, the posterior line feebly dentate; all the 3 maculae marked by a border of black scales, the coniform macula only at the apex, the ring-macula and reniform macula only laterally; the undulate line consists of a row of small dark brown spots in the spaces between the veins, being in the middle shaped like sagittae. Hindwing grey, dusted with brown, with darker veins and white fringes. Expanse of wings: 34 mm. From Peru. *griseata.*

H. modesta Morr. (19 f). Forewing purple grey, strewn with dark brown, in the distal half of the discal area dusted with brown, with single blackish transverse lines and median line; maculae small, indistinctly encircled with brown, the reniform macula reddish, in the lower end pupilled blackish and often with a white dot in the lower distal angle; the undulate line consists of a row of minute blackish-brown spots, at the costal margin before it a dark spot. Hindwing blackish-brown with grey fringes. From Canada and the United States as far as New York. *modesta.*

H. fasciata Sm. (19 f) has bluish-grey forewings strewn with dark blackish-brown, behind the median line dusted with blackish-brown, with rather indistinct transverse lines, the posterior line being uncommonly close at the distal margin and only consisting of dots; the coniform macula is a black wedge-shaped streak, the ring-macula is absent, the reddish-brown reniform macula is surrounded by blackish; the undulate line is represented by black dots in red-brown rings. Hindwing greyish-brown. New Mexico. *fasciata.*

H. plenipotencia Dyar (19 f). Purple-reddish brown, strewn with dark, the subterminal area, the costal margin and the costal-marginal half of the basal area remaining the lightest; transverse lines double, all the three maculae finely encircled with black, the reniform macula distally bordered with white; undulate line light, the narrow marginal area behind it purple black, before it black, white-dotted streaks on the veins. Hindwing whitish, at the margin darkened, in the ♀ brownish-grey. Mexico (Zacualpan) *plenipotencia.*

H. umbera Dyar (19 f) is larger with more pointed forewings, without any white at the reniform macula, strewn with a much darker purple black, so that almost only the reniform macula and the undulate line show through purple-reddish, the subterminal area is also dark; the posterior transverse line is more dentate, very distinctly double. Hindwing whitish, at the margin darkened with darker veins. From Mexico (Zacualpan). *umbera.*

- biterminosa*. **H. biterminosa** Dyar (19 g) is likewise similarly coloured and marked, but very conspicuous owing to the light reddish distal part, which colour appears chiefly in two broad stripes, one from the distal half of the reniform macula obliquely upwards to the apex, the other between the submedian fold and lower median vein as far as the margin, above it somewhat darker; the blackish colour extends from the margin as a pointed triangle to the lower cell-angle, the coniform macula being very large and broad, like a semicircle; the distal transverse line is quite extinct. From Mexico (Zacualpan).
- degenerans*. **H. degenerans** Dyar (19 g). Forewing light coppery reddish or yellowish-brownish, the whole cell densely strewn with black, so that it appears as a dark wedge-shaped spot with the apex at the base. Of other markings there are only at the costal margin the beginnings of double transverse lines, and the posterior line as an indistinct double row of dots. Maculae absent, except the reniform macula being in some specimens marked as a whitish brightening behind the lower cell-angle; a black basal ray is present; the undulate line is here marked by white dots on the veins, the marginal area is shaded with blackish. Hindwing diaphanous white with a dark margin. From Mexico.
- disticha*. **H. disticha** Morr. (19 g). Forewing grey, strewn with brown and behind the median line dusted with brown, with double transverse lines filled up with grey; of the maculae only the yellowish reniform macula is distinct, in a grey ring and encircled with brown; the grey undulate line is quite indistinct with a dark brown spot before it at the costal margin. Hindwing greyish-brown. From Texas.
- dilecta*. **H. dilecta** Edw. (19 g) has light grey forewings tinted flesh-coloured reddish and strewn with brown, with indistinct single transverse lines and behind the median line brown dusting; the reniform macula is in the ♂ reddish-brown, in the ♀ grey, encircled with black, surrounded with whitish dots in the lower half; before the indistinct grey undulate line there are single black dots. Hindwing ochreous-brown, towards the base lighter. Colorado, Arizona.
- orbiculata*. **H. orbiculata** Sm. (19 g) is on the forewing grey, dusted and strewn with dark brown, below and behind the cell tinted reddish, with a black basal ray; the anterior transverse line indistinctly double, on the proximal-marginal vein very pointedly proximally angled with the long pointed coniform macula behind it, the posterior double transverse line filled up with white; the whitish, very oblique, triangular ring-macula is above and below open, below connected with the reniform macula: before the whitish undulate line small black sagittae. Hindwing brown. Colorado.
- niveiguttata*. **H. niveiguttata** Grt. (19 g) has grey forewings strewn with black and brown, on the folds and at the proximal margin tinted ochreous, with a dark basal ray, double transverse lines and small maculae encircled with black, the reniform macula below filled up with black, with 2 white dots therein; the subterminal area before the feebly dentate undulate line darker than the marginal area. Hindwing brownish-black. California.
- elaeochroa*. **H. elaeochroa** Dyar. Forewing smoothly scaled, yellowish olive-grey, in the basal and marginal areas more intensely yellowish; the fine transverse lines are blackish, the proximal line on the proximal-marginal vein dentate, the distal line finely dentate; both the upper maculae are filled up with blackish; undulate line extinct. Hindwing blackish, in the disc whitish. Expanse of wings: 35 mm. Peru (Cuzco).
- ruficana*. **H. ruficana** Drc. (19 g). Forewing reddish-brown, basal area, both the maculae forming an ω and the marginal area greyish-white, of which colour are also 2 fine slightly undulate transverse lines, between them in the centre of the proximal margin 2 black spots. Hindwing light brown. Peru and Bolivia.
- melanopis*. **H. melanopis** Drc. (= *cillutincaræ* Zerny) (19 h) has deep dark brown forewings with fine, broken, black transverse lines, at the cell-end an indistinct black spot; marginal area light brown with a submarginal black undulate line; fringes dark brown. Hindwing yellowish-white, at the margin somewhat darker. Expanse of wings: 35 mm. Peru, Bolivia.
- stenorena*. **H. stenorena** Drc. Forewing dark red-brown, in the basal area green, a round green spot in the cell, at the cell-end with a large, greenish-white spot; the proximal margin is pinkish-brown; the broad olive-green undulate line is bordered with black, at the margin there is a row of white dots. Hindwing dark brown with a green marginal line. Expanse of wings: 38 mm. Peru.
- olivescens*. **H. olivescens** Drc. has an olive-green thorax and forewing with a black dentate anterior transverse line; the light ring-macula is quadrangular, the reniform macula whitish, bordered with black; before the light, faint undulate line in the centre some black spots. Hindwing brownish-black with olive-green fringes. Expanse of wings: 44 mm. Peru.
- poliorhoda*. **H. poliorhoda** Drc. Forewing dark red-brown, densely strewn with silvery grey, with a faint grey spot at the cell-end and a dark brown distal transverse line. Fringes brown. Hindwing white, costal margin, apex and margin dusted with brown. Expanse of wings: 36 mm. Peru.

26. Genus: **Neomanobia** Dyar.

Distinguished from the preceding by the tuftless abdomen and by the anterior tarsi exhibiting on the outside of the first joint a series of short thick spines. Only 1 species:

N. thyodes Dyar (19 i). Forewing dark brownish-black with a red-brown reniform macula with a *thyodes*. loam-coloured yellowish distal margin, the other maculae almost extinct and with thick black dentate transverse lines, behind the posterior line a row of black dots on the veins; the black undulate line is rather distinct. Hindwing brown, in the distal third blackish, with black veins and discal spot. Mexico (Zacualpan), in July.

27. Genus: **Proteinania** Hmps.

Separated from the following genus *Eriopyga* by a longer, porrect palpal joint and a loose tuft on the first abdominal ring.

P. achatioides Gn. (= *eros* Wkr.) (19 h). Forewing olive-green mixed with pinkish red, with black, *achatioides*. irregularly dentate transverse lines, the cell filled up with black between the maculae, and black spots before the undulate line. Hindwing whitish, at the margin darkened. Brazil.

P. vigasia Schs. (19 h) has ochreous-reddish forewings strewn with black, with rather straight yellow *vigasia*. transverse lines broadly bordered with brownish, the posterior line marked by black dots on the veins; the light undulate line proximally bordered with red-brown; the brownish maculae are in ochreous-yellowish rings. Hindwing light yellowish with reddish fringes. Described from Mexico.

28. Genus: **Eriopyga** Gn.

One of the most polytypical genera the representatives of which are almost exclusively distributed in America, where they occur from the northernmost districts down to Chile, representing the Noctuid type in a most complete way; many species occur in very great numbers. The proboscis is well developed, the last palpal joint mostly rather long, the frons smooth without projections, with large round eyes. The thorax is clad with scales mixed with hairs, without any more developed tufts, the abdomen being also tuftless. The distal margin of the moderately broad forewing is rounded, mostly entire, but it may also exhibit a slight dentation. In the veins there is no essential difference from the other genera, but the costal of the hindwing does not anastomose so closely at the base of the cell with the subcosta, but mostly at the first third of it. There are more than 200 species known up to this day, the ♂♂ of which often exhibit very conspicuous secondary sexual marks in the shape of long hair-tufts on the body or legs, or long hairing on the under surface of the wings.

Sect. I. ♂ antennae doubly combed:

E. crocosticta Schs. (19 h). Forewing purple brown, finely dusted with grey, with indistinct, single, *crocosticta*. undulate transverse lines, small, dark round maculae, the reniform macula distally with an elliptic orange-red spot, and a blackish-spotted undulate line. Hindwing yellowish blackish-brown with lighter fringes. Mexico.

E. stictipenna Dyar has dark brown forewings with small white spots at the costal margin and the *stictipenna*. distal transverse line; the reniform macula consists of small white spots, the transverse lines otherwise little prominent, double, filled up with a lighter colour, the undulate line forming 2 bows; coniform macula and ring-macula roundish, encircled with black. Hindwing light with darker veins, margin and discal spot and white fringes. Expanse of wings: 25 mm. Mexico (Puebla).

E. fea Drc. (19 h) has yellowish greyish-brown forewings with fine black, single, undulate transverse *fea*. lines and a strong median line; the large, round maculae are finely encircled with brown, the reniform macula exhibits distally a light yellow spot with yellowish or whitish dots above it and below it; undulate line yellowish-white, often divided into small spots. Hindwing blackish-brown. Mexico and Guatemala.

E. mulina Schs. Forewing yellowish-brownish, tinted somewhat purple-reddish, with rather indistinct *mulina*. single transverse lines, the posterior line being dentate, blackish-pupilled, light-ringed maculae, the reniform macula strangulated and below filled up with black; the light undulate line is proximally bordered with brown. Hindwing whitish, tinted brown on the veins and margin, with light pinkish-reddish fringes. From Mexico.

E. tersa Drc. (20 a) is on the forewing yellowish greyish-brown, strewn with whitish, with black *tersa*. transverse lines bordered with grey, behind the distal line black dots on the veins; maculae small, ochreous-yellowish, the reniform macula below with 2 white dots; the undulate line consists of yellowish-white small spots proximally bordered with brown. Hindwing white, on the veins and margin yellowish-brown. Guatemala.

- epipsilina*. **E. epipsilina** *sp. n.* (23 a) strongly recalls some species of *Epipsilia* from the *tecta*-group. Forewing coppery reddish-brown, in the costal-marginal part somewhat lighter, the costal margin itself light yellowish, with single dark brown transverse lines, the anterior line composed of 3 bows, the posterior line being dentate; the small maculae are whitish, encircled with dark, the undulate line is marked by small darker internerval spots. Hindwing yellowish white, antennae long-combed. Described according to 1 ♂ from Rio Grande do Sul.
- baruna*. **E. baruna** *Schs.* (19 i). Forewing deep purple reddish-brown, with black-striped veins, in the marginal area more brownish-grey, with very indistinct transverse lines and small maculae in whitish rings, instead of the undulate line a row of black dots in the costal-marginal half. Hindwing light strewn-coloured, at the margin brownish, in the ♀ darker. Brazil: Castro (Paraná).
- mediorufa*. **E. mediorufa** *Schs.* (19 i). Forewing purple-red, strewn with silvery blue scales, with double transverse lines and undulate red-brown median shades between the small red-brown maculae in silvery blue rings; undulate line indistinct, light, proximally bordered with dark brown. Hindwing yellowish-white, at the margin brownish. Brazil.
- velutina*. **E. velutina** *Jones* is very similar, purple brown with a silvery grey reflection, different by the single, obliquely running, undulate, dark brown anterior transverse line; the distal half of the discal area is dark brown; the double posterior transverse line is filled up with grey, behind it the subterminal area is shaded darker, the undulate dark brown subterminal line is divided into small internerval spots. Hindwing ochreous-yellowish, veins and marginal half dark brown. Expanse of wings: 38 mm. Brazil (Castro).
- contempta*. **E. contempta** *Schs.* (= *fea* *Drc.* p. p.) (19 i) is smaller than the somewhat similar *fea*, more intensely strewn with grey, with traces of a coniform macula, and small flesh-coloured reddish maculae which are pupilled brown and encircled with brown; the light indistinct undulate line is proximally bordered with brown. Hindwing whitish, at the margin and veins brownish. The ♀ has a strong whitish anal tuft with darker, less distinctly marked forewings. Mexico, Guatemala, Costa Rica.
- curtica*. **E. curta** *Sm.* (19 h) has reddish-brown forewings, often with an ochreous tint strewn with whitish and black scales, faded or absent transverse stripes and small maculae indistinctly encircled with whitish, the reniform macula strangulated, below filled up with black, behind the distal transverse line there are black dots on the veins; the undulate line is whitish, proximally bordered by small dark sagittae. Hindwing yellowish-white, at the margin deeper yellow, on the veins and apex brownish. Colorado and California.
- akalus*. **E. akalus** *Streck.* (19 h) is on its dull reddish-brown ground densely strewn with grey, in the discal area usually somewhat darkened and marked with more distinct transverse lines; the maculae are indistinctly encircled with brown, also the coniform macula is present; on the proximal side of the grey undulate line there are indistinct small brown sagittae. Hindwing monotonously brown with whitish fringes. Known from Colorado.
- perfusca*. **E. perfusca** *Hmps.* (= *paupera* *Drc.*, *oviduca* *Drc.*, *infirmata* *Drc.*) (19 i, k). Forewing yellowish greyish-brown, coarsely strewn with a darker colour, the discal area often somewhat more prominently darker, with whitish transverse lines and large maculae encircled with whitish, the undulate line proximally darker. Hindwing yellowish white, towards the margin darkened. Mexico.
- rufula*. **E. rufula** *Grt.* (20 a) is very similarly marked, but it has a purple reddish-brown ground-colour which is scantily strewn with white; the white transverse lines are on the sides facing each other either bordered with a somewhat darker colour or not, the reniform macula is below filled up with a darker colour. Hindwing whitish, on the veins and margin brownish, in the ♀ quite brown. — Larva brown, on the dorsum lighter with darker spots in it, and orange colouring on the posterior two thirds of the prothorax and on the 12th ring. Colorado and California.
- indra*. **E. indra** *Sm.* is allied to the following *utahensis* and also to *oviduca* (20 b), but it is larger and somewhat differently marked. Forewing yellowish-brown, in the ♀ more brown with double transverse lines filled up lighter in the ♀, the posterior line more or less punctiform, between them a faded median shade near the postmedian line; the upper maculae encircled with yellowish, the reniform macula filled up with dark; before the undulate line darker scaling. Hindwing smoky grey, towards the base lighter. Expanse of wings: 27 to 32 mm. Arizona, in September and October.
- utahensis*. **E. utahensis** *Sm.* (19 k). Forewing yellowish-brown, strewn darker, with very indistinctly double transverse lines filled up with a somewhat lighter colour, and small maculae in light rings, the reniform macula finely encircled with dark and below filled up with blackish; behind the undulate line, which is only marked by few small light scales, the marginal area is darker. Hindwing light ochreous with brownish veins and margin. Described from Utah.
- perforata*. **E. perforata** *Grt.* (19 k) has light reddish-brown forewings strewn with a darker colour, with indistinct, light, undulate, double transverse lines which are filled up with a lighter colour; the maculae are rather large, in light rings, the reniform macula below pupilled dark, before it a rather indistinct bent median line; behind the light undulate line the marginal area is darker with black streaks on the veins. Hindwing dull reddish-brown. Arizona.

E. incincta *Morr.* (19 k). Forewing brownish-grey with a violettish tint, with single darker transverse *incincta* lines, and behind the dentate distal line with black dots on the veins; the rather small maculae are in light rings, the reniform macula with a darker pupil; before the light undulate line a brown shade forming in the centre small indistinct sagittae. The whitish hindwing is strewn with brown, whilst the veins and margin are brownish. United States.

E. infelix *Dyar* (19 i) resembles *incincta*, but it is more slender, with narrower wings, the undulate *infelix* line is more broken, more densely dusted, the marginal area darker; the ground-colour is more an ochreous grey, the anterior transverse line very much dentate. Mexico (City) in September.

E. saturnus *Streck.* is almost the intermediary between *incincta* (19 k) and *oviduca* (20 b), the forewing *saturnus* being greyish-brown, strewn but slightly darker, with single, dentate, on the averted sides somewhat lighter edged transverse stripes, with dots on the veins behind the distal one; the maculae are larger than in *incincta*, likewise in lighter rings and with somewhat darker pupils; before the lighter undulate line extends a red-brown nebulous stripe discally with 2 long black sagittae. Hindwing brownish-grey with lighter fringes. From Wisconsin.

E. oviduca *Gn.* (= capsella *Grt.*) (20 b) has greyish-brown forewings with a violet, reddish or yellowish tint *oviduca* and black strewing, the transverse stripes edged whitish, and black and white dots on the veins behind the distal one; the maculae are pupilled brown and with yellowish rings, the yellowish undulate line is proximally edged with dark brown. Hindwing brownish-grey with lighter fringes. — The dirty brown larva is on the dorsum lighter with darker spots therein and orange colouring on the 12th ring; it entirely resembles the larva of *rufula*, but it shows orange colouring only on the posterior third of the prothorax. From Canada to New York and Illinois.

E. melanopis *Hmps.* (19 k). Forewing greyish-brown, strewn darker, with the same transverse lines as in *melanopis* *oviduca*, but darker, blackish, white-ringed maculae, the reniform macula on the median proximally produced; behind the distal transverse line there are black streaks on the veins; the whitish undulate line is proximally edged with dark. Hindwing white, on the veins and margin brownish, in the ♀ quite brown. From Arizona.

E. constans *Dyar* is similar to *melanopis* (19 k), of a lighter grey, the maculae dark grey, not so black, *constans* the double transverse lines filled up with a lighter colour are faded in the ♂, more distinct in the ♀, instead of the distal line there is a series of dots on the veins; before the light, irregular undulate line a dark shade, behind it the marginal area is darkened. Hindwing dusted with grey with a dark central spot. Expanse of wings: 29 mm. Mexico.

E. phanerozona *Dyar* likewise resembles *melanopis* (19 k), on the grey forewings it is strewn with *phanerozona* black, the light yellowish transverse lines are straight, edged with a darker colour, like the undulate line; the maculae are scarcely darker than the ground, in lighter rings. Hindwing dirty whitish, at the margin, veins and central spot darkened. Expanse of wings: 27 mm. Mexico (Tehuacan in Puebla), in June.

E. orobia *Harv.* (19 k). Forewing olive-brown, strewn with white, with partly double, white-filled *orobia* transverse lines, behind the distal one dark streaks on the veins and white dots, and with a white undulate line. Hindwing strewn with brownish, on the veins and margin darker. From Texas.

E. ochrota *Schs.* (19 b) is rather variable; forewing ochreous-yellowish, densely strewn with blackish, *ochrota* predominantly in the costal-marginal and distal-marginal areas, with rather indistinct, black, dentate transverse lines; the small maculae are surrounded by black, the reniform macula below and above open, distally spotted white; before the undulate line long black sagittae opposite the cell. The white hindwing is strewn with brownish, with a dark central dot and marginal line. Mexico.

E. obtusa *Sm.* Forewing dark grey, strewn with black, with entirely extinct transverse lines and *obtusa* small yellowish maculae encircled with black, the coniform macula being present, too; undulate line marked by yellowish dots. Hindwing white. Expanse of wings: 27 mm. From Arizona.

E. antennata *B. & Mc. D.* (20 b) has deep brown or purple brown forewings with more or less dis- *antennata* tinct, double transverse lines filled up with a lighter colour, the distal part of the posterior line composed of dots on the veins, between both a black median shade; the ring-macula is small, surrounded with dark, the reniform macula in the upper half distally filled up with yellow, above with one, below with two white dots; behind the somewhat lighter subterminal area follows the light yellow, broken undulate line which is proximally shaded with dark. Hindwing diaphanous whitish, distally smoked dark with a small central dot. Expanse of wings: 25 to 28 mm. From Arizona. The distinctness of the marking varies and the white dots of the reniform macula may be absent.

E. condensa *Dyar* (19 k) has but very short antennal pinnae, of the width of the shaft at most. *condensa* Ochreous-brownish grey with double transverse lines, the posterior line followed by a row of dots, with a distinct median shade. The reniform macula consists of 2 small black lunae with reddish colour between them; the subterminal area is of a darker brown, traversed by the lighter undulate line. Hindwing dark with reddish fringes. Mexico (Zacualpan).

Sect. II. ♂ antennae serrate-dentate with ciliary tufts.

E. rhodohoria *Dyar* (20 b). Forewing pinkish-brown, in the shape of broad transverse bands strewn *rhodohoria* with blackish, with undulately curved, brown, single transverse lines, on the averted sides of which the pinkish-brown ground shows pure; the maculae are finely surrounded with brown, the reniform macula is below

filled up with blackish; the undulate line is almost straight, red-brown, distally with a particularly broad pink edge. Hindwing blackish grey with light reddish fringes. Mexico (Zacualpan).

serrata. **E. serrata** Sm. (= *dubiosa* B. & Mc. D.) (20 c). Forewing brownish yellow, dusted with a darker brown, with rather indistinct markings: double transverse lines filled up with a lighter colour, large maculae in light rings and surrounded with black, darker veins in the marginal area, and a light, interrupted undulate line. Hindwing white with a fine dark marginal line. Described from Texas.

jocosa. **E. jocosa** B. & Mc. D. (= *serrata* Hmps.) (23 a) is extraordinarily similar to *serrata*, and it may only be a form of it from Arizona; it is characterized by a smaller reniform macula and a more remote posterior transverse line.

reliqua. **E. reliqua** Sm. (20 c). Ferruginous-reddish brown with blackish transverse lines bordered with white on the averted sides, large maculae indistinctly surrounded with light, without a coniform macula, with a rather indistinct brown median shade; the yellowish undulate line is distally scaled dark, the marginal area strewn somewhat grey, the light fringes speckled brown. Hindwing light reddish-brown with darker veins. Colorado.

bostura. **E. bostura** Sm. is to be compared with *rufula* (20 a) and *indra*, but in the colour more dirty yellowish-brown with greyish-brown dusting; the markings are rather inconspicuous and the transverse lines are running differently, the double anterior line obliquely distally towards the proximal margin, on the veins dentate towards the base, the posterior line curved round the reniform macula, below it with a uniform inward bend, its proximal part composed of small lunar spots, the distal part of dots; before the narrow yellowish undulate line extends a broad blackish shade. Hindwing smoky-grey, towards the base whitish. Expanse of wings: 32 mm. British Columbia.

trifascia. **E. trifascia** Sm. (20 c) is easily recognizable by its contrastingly light ochreous yellowish-white head, collar and costal-marginal streak, whereas the red-brown forewing is strewn with blackish; the light transverse lines are broad, the small light maculae are pupilled darker, between them a broad dark median shade. Also the light undulate line, which is bordered by a darker colour on the proximal side, is comparatively broad. Hindwing white. Colorado.

planalis. **E. planalis** Grt. (20 c) has dull reddish-brown forewings strewn with a darker colour, with double black transverse lines, small maculae with lighter rings and surrounded with black, with a faded black streak between both; the very indistinct undulate line is on the inside above the centre bordered by dark sagittae. The light yellowish hindwing is dusted with a brownish grey. New Mexico.

agrotiformis. **E. agrotiformis** Grt. (20 c) has blackish-brown forewings with a purple tint, rather indistinct and like in *planalis* double transverse lines, darker maculae in grey rings and surrounded with black, between them a black spot filling up the cell; the undulate line is reddish ochreous, on the inside with minute black sagittae, the marginal area behind it lighter, greyer. Hindwing yellowish-white, thickly strewn with brown. Colorado.

catalina. **E. catalina** B. & McD. (20 c) entirely resembles the two preceding species in the scheme of markings, but it has a much brighter colouring, purple dusted with ochreous yellowish and black, with much more prominent markings. Transverse lines double, with lighter fillings, the posterior line only double at the costal margin, behind it black streaks on the veins with white dots; the ring-macula is surrounded with yellow, the large reniform macula below produced towards the base, light yellow with a darker proximal ring, between both a velvety black spot. Hindwing smoky grey with yellow fringes. From Arizona.

euxoiformis. **E. euxoiformis** B. & McD. (20 c) is very similar to *agrotiformis*, but in the ♂ it has ciliated antennae. Forewing purple brown with double transverse lines filled up with a somewhat lighter colour, of which, however, only one is more distinctly prominent; the coniform macula is filled up with an ochreous-yellowish colour; between the maculae, which are somewhat lighter than the ground and pupilled dark and surrounded with black, there is a deep blackish-brown spot. Hindwing smoky-grey, towards the base lighter.

alamosa. **E. alamosa** Barnes (20 d). Forewing yellowish ranging into dark brown, with darker markings tinted purple. Transverse lines distinctly double, with lighter fillings, traversed by the somewhat lighter veins, like the dark median shade; before the light yellowish undulate line a purple shade of single small lunae traversed by the light veins; the lighter ringed maculae are pupilled purple. Hindwing yellowish-white, at the margin somewhat darker. Expanse of wings: 34 mm. Arizona.

culea. **E. culea** Gn. (= *modifica* Morr.) (20 d). Forewing light reddish-brown, strewn with a dark brownish grey, in the marginal area dusted with a brownish grey; the blackish-brown transverse lines are on the averted sides bordered with whitish; the ring-macula is a small, brownish spot, the reniform macula is feebly surrounded with whitish and below filled up with blackish; instead of the undulate line there are single black dots. Hindwing yellowish-white, towards the margin dusted with brown. From Massachusetts, New York, New Jersey, Illinois and Florida.

consopita. **E. consopita** Grt. (20 d) is very similar to *culea*, somewhat larger, but it has ochreous brown or reddish-yellow forewings with indistinct transverse lines being edged with light on the averted sides; the ring-macula

is round, in a whitish ring like the reniform macula which is below pupilled blackish; the subterminal row of dots is only traceable. Hindwing whitish, in the marginal area tinted ochreous. Known from Arizona.

E. hueco *Barnes* (20 d). Forewing whitish-yellow, suffused with a deep red, with white transverse *hueco*. lines bordered with a deep red on the averted sides, and red maculae in white rings; the dentate undulate line is on both sides bordered with red, behind it the veins of the marginal area are striped red. Arizona.

E. diplogramma *Schs.* (= *inquisita* *Dyar*) (20 e), like the following, exhibits a somewhat produced apex *diplogramma*. and slightly concave distal margin of the forewing which is yellowish-white, in the proximal part dusted with purple brownish, the veins marked darker brown; only traces of the transverse lines marked by dots; between the maculae marked by dots there is an olive-brownish, faint median line which is flawed in an acute angle at the lower angle of the cell; the straight undulate line parts the apex, it then becomes double and exhibits in front minute sagittae. Hindwing diaphanous whitish, with brownish veins and margin. Mexico. Probably also *Morissonia albidior* *B. & McD.* (p. 155) belongs hereto.

E. euryte *Drc.* (20 d). Forewing slightly reddish, at the costal margin white, scantily strewn with *euryte*. black, with white, in the costal part dark striped veins; transverse lines only traceable, the posterior line marked by black dots on the veins, farther below accompanied by a dark shade, the apex parted by a dark line; the ring-macula is a small, whitish circle with a ferruginous red dot in the centre, the reniform macula has the shape of a sand-glass, and is above and below marked black; instead of the undulate line there is a row of faint dots. Hindwing brownish-grey with yellowish fringes. Distributed from Costa Rica to Brazil.

SECT. III. ♂ antennae ciliated.

E. rhodotrichia *Hmps.* (20 d) is in the ♂ distinguished by long pink hair-tufts on each side of the *rhodotrichia*. abdominal base and by downward hairing on the under surface of both wings almost as far as the margin, the femora and tibiae being covered with long pink hair, the forewings being red-brown, suffused with pink, with rather indistinct transverse lines, and behind the strongly dentate distal line with dots on the veins; maculae finely encircled with brown, the undulate line marked by a very faint shade. Hindwing yellowish brownish-grey. Brazil.

E. pallescens *Schs.* (20 e) in its exterior is somewhat like *euryte* (20 d), but it differs by thick red- *pallescens*. brown hair-tufts on the femora of the ♂ and long, yellow, downward hairing on the under surface of the forewing in the disc, and by lateral red-brown hair-tufts on the base of the abdomen. Forewing quite light brownish pink with hardly traceable transverse lines, the posterior line replaced by dots on the veins, only the undulate line being somewhat more distinct and double; instead of the ring-macula a black dot, the reniform macula is reddish, above and below with small black spots. Hindwing brownish. From Brazil to Paraguay.

E. fuscibarbatata *Hmps.* (20 e). This species and the 4 next species have thick hair-tufts only on the *fuscibarbatata*. middle femora and tibiae, at the abdominal base very long hair-tufts, long hair on the sides of the abdomen, and within the cell of the forewing beneath silky, downward hair. Forewing yellowish-grey, dusted with red-brown, with rather indistinct double transverse lines, the distal part of the posterior lines dotted; the large maculae are in light rings, the reniform macula with a concavity towards the base; the dark undulate line is edged with a lighter colour towards the margin. Hindwing dark brownish-grey. Brazil.

E. vinobarbata *Hmps.* (20 e). Forewing grey, suffused with a reddish or purple brown; the anterior *vinobarbata*. transverse line is double, the posterior line finely dentate, distally grey with a row of black dots on the veins. The maculae are pupilled brown, in indistinct light rings, the reniform macula narrow, below filled up with black; the light undulate line is proximally edged with dark, the apex parted by an oblique black streak. The light hindwing is brownish on the margin and veins. Ecuador.

E. melanogaster *Gn.* (20 f). The yellowish grey forewing is dusted with purple brown, on the veins *melanogaster*. and costal margin strewn somewhat darker; the transverse lines are on the averted sides bordered with whitish, behind the distal line black and white dots on the veins; the large maculae are encircled with whitish, the straight whitish undulate line is proximally bordered with brown. Hindwing reddish-brown. Brazil.

E. secedens *Schs.* (20 f). The red-brown forewing is dusted with purple pink, with indistinct, yellowish *secedens*. transverse lines with black dots on the veins behind the distal line; the large maculae are in yellowish rings, the yellowish undulate line is proximally bordered with brown. Hindwing yellowish brownish-grey. Brazil, Bolivia.

E. excavata *Hmps.* (20 g). Forewing grey, strewn with red-brown and scantily with black, the trans- *excavata*. verse lines rather indistinct, on the averted sides bordered with grey, behind the distal line with blackish streaks on the veins interrupted by grey; the large maculae are in grey rings, the reniform macula is towards the base concave; the grey undulate line is proximally bordered with a brownish red. Hindwing brownish-grey. Brazil, Ecuador.

E. lamptera *Drc.* (20 e). The ♂ has the same sexual marks, but beneath it shows hair also in the cell *lamptera*. of the hindwing, the basal abdominal tufts being absent. Forewing red-brown, tinted olive at the costal margin, with almost straight transverse lines; the dark maculae in light rings; the undulate line marked by minute dark sagittae. Hindwing diaphanous white, the costal margin, proximal margin and veins greyish-brown. From Mexico to Paraguay.

- macrolepia*. **E. macrolepia** *Hmps.* (= *moesta* *Drc.* nec *Wkr.*) (20 f) is very well distinguished by extraordinarily long hair-tufts on the sides and at the end of the abdomen, as well as very large, upturned scales in the mesothorax; the forewing beneath shows a hairy fringe in the basal third of the costa, whilst the cell is clad with long, downward scales as far as below the median. Forewing ferruginous-red with double transverse lines filled up with yellowish, behind the distal line black and white dots on the veins; the undulate line consists of small black and whitish sagittae. Hindwing reddish brownish-grey. From Costa Rica.
- gigantea*. **E. gigantea** *Schs.* (20 e). This species and the 5 following exhibit on the pectoral side of the thorax large tufts of hair and scales, lateral long hair on the abdomen, and downward hair in the cell of the forewing beneath. Forewing yellowish-white, scantily strewn with black and dusted with reddish-brown, the costal part is lighter; the transverse lines are marked by dark dots, the maculae by somewhat darker spots. Hindwing yellowish-white, veins, fringes and costal-margin ochreous-yellowish. Brazil.
- flavigera*. **E. flavigera** *Gn.* (= *dolens* *Drc.*) (20 g). The whitish forewing is dusted with reddish; the transverse lines are only marked, behind the distal line there are dots on the veins; only the reniform macula is present as a small yellowish moon-spot, below pupilled black; the straight undulate line is double and parts the apex, the marginal area behind it is somewhat deeper brownish-red. Hindwing yellowish-brown. From Costa Rica to Brazil.
- fulvida*. **E. fulvida** *Hmps.* (20 g). Forewing yellowish-red with a whitish reflection, the transverse lines edged with whitish, behind the distal line dark dots on the veins, and with very large, confluent maculae, the reniform macula towards the base concave; the whitish undulate line is almost straight, at the margin a strongly dentate light line. Hindwing light yellowish, the veins and marginal half brownish. Brazil (Rio de Janeiro).
- friburgensis*. **E. friburgensis** *Gn.* (20 f) has light brownish-reddish forewings, the centre of the costal area being darker; of the transverse lines only the straight posterior line is more distinct, double, filled up with whitish; the large elliptical maculae are surrounded by whitish, the undulate line consists of traces of a row of dark dots. Hindwing reddish-brown with yellowish fringes. Brazil (Novo Friburgo).
- carneitincta*. **E. carneitincta** *Schs.* Forewing lilac grey with a silky lustre, scantily strewn with black; two thirds of the costal margin, the cell-end and an oblique subapical shade are reddish-brown; the transverse lines consist of dots on the veins, the distal line is in the lower half proximally pupilled white; the marginal area is shaded with brown, the indistinct reniform macula is reddish-brown, below spotted grey. Hindwing brownish-grey. Expanse of wings: 35 mm. From Guatemala (Purulha).
- carneigera*. **E. carneigera** *Gn.* (20 g) is on the whitish forewing strewn and in some places dusted with light brownish, with straight transverse lines being on the averted sides bordered with a lighter colour, with a row of dots on the veins behind the distal line; the very large elliptical maculae are yellowish-brown, surrounded with whitish, between them a yellowish brownish median shade extends to the proximal margin; the straight whitish subterminal line is proximally bordered with yellowish-brown. Hindwing white, veins and margin ochreous-yellowish. Brazil (Rio de Janeiro).
- subsimilis*. **E. subsimilis** *sp. n.* (23 b) resembles *carneigera* in the scheme of markings, but it has much broader forewings of a more reddish-violet ground-colour, scantily strewn with black, the brownish-black transverse lines are much less prominent owing to the lighter shading on the averted sides being only marked, and the maculae are smaller and narrower; the narrow, lighter undulate line which is on both sides narrowly edged with dark, terminates on the lowest subcostal vein from where a darker nebulous stripe runs to the apex. Hindwing iridescent transparent white with loam-coloured yellowish fringes. Described according to 1♀ from Bolivia (Cuesta de Cillutincara).
- proxima*. **E. proxima** *sp. n.* (23 c) has likewise very similarly arranged markings, but the hairing of the cell of the forewing beneath is not turned downward, but it is smoothed out towards the margin; the hindwing is at the base entirely covered with single, long, white hairs; the species also resembles *E. approximans* (21 e). Forewing of a warm red-brown colour, scantily, but in the subterminal area very densely strewn with a lilac white, with scarcely darker, straight transverse lines being on the averted sides hardly noticeably bordered with a light colour, and with extremely fine, only towards the costa thicker black dots on the veins behind the distal line; maculae like in the preceding species; the undulate line is very light yellowish-brown, proximally more intensely bordered with red-brown than distally. Head and anterior half of the collar but somewhat more tinted orange. Hindwing slightly yellowish, at the costal margin, apex and distal margin smoky. South Brazil (Sa. Cruz).
- chlorocyma*. **E. chlorocyma** *sp. n.* (23 b) exhibits the same marking as the preceding, but it is not lighter in the subterminal area. Forewing beautifully purple brown, scantily strewn with black, more densely below the costal margin, where we notice also subapically interspersed greyish-white scales; the transverse lines are quite indistinct, in the subterminal area the veins are dotted whitish and doubly dotted black; the fine bordering round the more deeply red-brown maculae and the undulate line which is on both sides bordered with dark, are yellowish-green. Hindwing light yellowish-grey with reddish fringes. The lateral hairing of the abdomen being black above, is in the ♂ violet, the anal tuft reddish-yellow. Both sexes, taken by FASSL, from Colombia (Quindiu Pass) and Bolivia (Cuesta de Cillutincara).

E. scalaris *sp. n.* (23 b) is very similar to the preceding, but the abdominal and thoracal hairing is *scalaris*. much shorter. The purple brown forewing is more coarsely strewn with violettish-white, the subterminal area particularly towards the proximal margin the most intensely; the anterior transverse line pointedly projects into the cell and on the median pointedly towards the margin as far as the ring-macula scalariformly, the posterior line is strongly curved round the reniform macula; above the middle of the light yellowish undulate line there is a slight red-brown shading; on the margin there are high dark brown triangles. Hindwing whitish, at the costal and distal margins smoky. Colombia (Quindiu Pass).

E. prasinocyma *sp. n.* (23 b). Forewing quite light flesh-coloured reddish, scantily and coarsely strewn *prasinocyma*. with black, in the basal area, in the distal half of the discal area, before the undulate line, on the fringes, and in the maculae yellowish-green, the transverse lines only marked by the contrast of the colours; behind the distal line single black dots on the veins, and the undulate line is marked by similar dots; in the upper and lower ends of the reniform macula there is one thick black dot each. Hindwing light reddish-grey with yellowish-greenish fringes. 1 ♀ from the Quindiu Pass (Colombia) at an altitude of 3500 m, taken by FASSL.

E. stenonephra *sp. n.* (23 b) has very light violettish-brownish forewings scantily strewn with black, *stenonephra*. at the costal margin as far as the cell-end more brownish-red as well as in the marginal area, with quite similarly arranged markings as in the preceding; the transverse lines are marked by somewhat more intensely accumulated black or brown scales, the posterior line exhibiting a very oblique course with a row of black, partly distally white-pupilled dots on the veins; the reniform macula is remarkably oblique, very narrow and long, brownish-red, encircled with light and dark, the narrow, oblong ring-macula is very indistinct and exactly parallel to the former; the undulate line consists of a double black line the distal part of which dies away towards the apex in an oblique diffuse spot parting the apex. Hindwing yellowish-white with scarcely darker fringes. 1 ♀ from the Quindiu Pass (Colombia), taken by FASSL.

E. lodebar *Drc.* (20 h). This species and the next 4 exhibit in the ♂ a basally very convex costa *lodebar*. which is beneath elad with a dense fur of downward hair, towards which erect scales are running from below the cell, and also the whole hindwing is clad with coarse erect scales, the costal margin exhibiting long scales turned downward. Head and collar are reddish-yellow in contrast with the deep purple brown forewing, the transverse lines are on the averted sides bordered with grey; only the triangular reniform macula is present, in the ♂ brown, in a grey ring, in the ♀ almost white and situate in a deeper blackish-brown discal area, and from it an undulate dark median line extends to the proximal margin; before the grey undulate line there are small dark sagittae. Hindwing dark brown. From Costa Rica.

E. orbica *Hmps.* (= *lodebar Drc. pro parte*) (20 g, h) is very similar, but easily separated by the smaller, *orbica*. roundish reniform macula. Distributed from Mexico to Guatemala.

E. lanaris *Btlr.* (= *cynica Drc.*) (20 h) has a red-brown forewing with almost straight transverse lines, *lanaris*. being on the averted sides bordered with a lighter colour, with a thick black dot before the anterior line on the proximal-marginal vein, and a double row of dots on the veins behind the distal line; the large maculae are finely encircled with light, the elliptical ring-macula is above open, the reniform macula is proximally produced on the median, the yellowish undulate line is on both sides bordered with brown. Hindwing reddish or yellowish-brown. The ♀ is darker with more distinctly prominent light markings. From Mexico to Ecuador and Bolivia.

E. moderata *Wkr.* (20 i) is similarly marked, somewhat smaller, and olive-brown with a silky lustre; *moderata*. the black dot before the anterior transverse line is absent, the row of dots behind the distal line is indistinct and only single; the large maculae are confluent below. Colombia.

E. turrialba *Schs.* (20 g). Forewing copper-reddish or violettish-brown, in the cell darker, the median *turrialba*. yellowish-white; the transverse lines are black, the anterior lines bordered with yellowish-white; the posterior line followed by double dots on the veins, separated by white; the reniform macula is distally yellowish-white, above it at the costal margin an oblique, yellowish-white line bordered with black; veins in the marginal area dark and strewn with grey. Hindwing brownish-grey with pink fringes. Expanse of wings: 30 mm. Costa-Rica (Volcano of Turrialba).

E. dolia *Dyar* in the colour and marking so entirely resembles *lanaris* (20 h) that it is scarcely separable *dolia*. in the exterior, but the distal transverse line is not so strongly flawed below the costal margin, and between it and the subterminal line there is a prominent dark rust-brown costal shade. The ♂ is easily distinguished by the hindwing not being coarsely scaled. Peru.

E. crenulata *Btlr.* (= *infirmata Gn. part., cynica Drc. part., lodebar Drc. part.*) (20 i) is also very much *crenulata*. like *lanaris* (20 h), but on the forewing beneath it exhibits long hair (not scales) turned downward at the costal margin and in and behind the cell, the hindwing likewise exhibiting hair within the cell and rough scales at the costal margin. This is the typical species from the eastern parts of North America, from Canada to Missouri and Colorado. The southern representatives have been separated from it, and as the differences are also great in the secondary sexual marks, we enumerate them in the following as separate species.

- vesquesa*. **E. vesquesa** Dyar is larger, more robust than the preceding, the downward turned hair on the forewing beneath reach yet to below the cell; with coarser and more angular transverse lines; the ♂ anal tufts are also less developed, without any lighter hairs therein; the marginal area of the forewing is somewhat lighter, with a distinctly dentate, light marginal line. The forewing is comparatively dark. Expanse of wings: 35 to 40 mm. From Mexico, Central America, Venezuela.
- oache*. **E. oache** Dyar is smaller, greyer, less brightly coloured, the distal transverse line forms a less acute angle below the costal margin, otherwise the markings are the same as in *vesquesa*. Expanse of wings: 30 mm. Described from Peru.
- ultimella*. **E. ultimella** Dyar (23 a) is likewise small, light greyish-brown, lustrous, the markings less prominent, therefore difficult to find out, but the same as in the preceding, the dentate marginal line is absent altogether. The hindwing exhibits a lighter, dull brown, in the disc almost whitish. Expanse of wings: 28 to 34 mm. Brazil (Rio de Janeiro and Castro Paraná).
- loliopopa*. **E. loliopopa** Dyar (20 f) is strikingly similar to the preceding in the exterior, but at once discernible from them by the presence of a large coniform macula being encircled with light, which is absent in all the similar forms. Forewing brownish-grey, otherwise marked the same as in the preceding; the marginal area looks somewhat darker than the rest of the wing owing to its being more densely strewn with brown, and the whitish undulate line is very distinct therein; the brown marginal line is not dentate, but in a speckled way crossed by the lighter ends of the veins. Hindwing of a dingy yellowish-white, on the margin and veins darker brownish-grey. Mexico (Zacualpan).
- croceifimbria*. **E. croceifimbria** sp. n. (23 a) is distinguished by a small patch of the hairy cover of the forewing being contrastingly lustrous reddish-yellow right after the rise of the lower median branch. Above the ♂ is light copper-red, the ♀ more greyish-brown with a slight coppery tint, the costal margin is strewn with black with the two very strong black middle transverse stripes crossed by the veins, behind the distal one with short black streaks on the veins, before the proximal one with a black, submedian dot; both the upper maculae are coloured like the ground and very finely encircled with a light yellowish colour, the reniform macula is very slightly blackened on the median; the fine, somewhat lighter undulate line is proximally shaded with a darker colour. Hindwing yellowish, at the margin broadly smoky, in the ♀ monotonously brownish-grey. Described according to 1 couple from the Senckenberg Museum without a statement of the patria.
- jamaicensis*. **E. jamaicensis** Hmps. (20 k) in the hairing of the wings beneath entirely resembles *crenulata* (20 i); the greyish-brown forewing is dusted with purple-reddish and strewn with blackish; the anterior transverse line is undulate, not straight, the large maculae are contiguous below, the reniform macula is strangulated in the middle, behind it black dusting extends to the distal transverse line behind which black streaks on the veins are situate, interrupted by white. Hindwing yellowish-white, on the veins and margin brownish. Known from Jamaica.
- brachia*. **E. brachia** Joan. (20 k) is a smaller species with remarkably short and broad forewings, the abdomen densely covered with woolly hair, and very long hair on the proximal margin of the hindwing and downward hair on the under surface of the forewing. The grey forewing is dusted with red-brown and somewhat strewn with black, with double transverse lines filled up with whitish and a row of black dots behind the distal line; the somewhat triangular ring-macula touches with its distal apex the centre of the reniform macula; the yellowish undulate line is on both sides bordered by red-brown. Hindwing brownish-grey, towards the base lighter. Organ Mountains.
- rhadata*. **E. rhadata** Drc. (20 i) and the 4 following species have a woolly hairing of the body and anal tuft and an entire margin of the wings, whilst the under surface of the wings does not show any abnormal hairing nor scaling. Forewing dark olive-brown, suffused with a silvery purple colour, with double, deeper black transverse lines, rather inconspicuous maculae encircled with a darker olive-brown and a median shade; of the very indistinct undulate line only a reddish-brownish or also greyish-white spot is conspicuous at the anal angle. Hindwing blackish-brown, in the disc whitish. Mexico to Costa Rica.
- christa*. **E. christa** Wkr. (= *orophila* Drc., *obscurus* Dogn., *infernalis* Schs.) (21 a) is a common species very much like *rhadata*, but more monotonous, with a single transverse line. Mexico to Ecuador; Jamaica.
- stygia*. **E. stygia** Dogn. Forewing deep red-brown with equally coloured markings fading away in the ground: undulate anterior and posterior transverse lines, a flawed median shade, an oblique ring-macula tapering off towards the base, and a quadrangular reniform macula; subterminally between the veins lighter small spots pupilled ochreous-yellowish, at the anal angle a larger spot; marginal area and proximal margin somewhat more reddish. Hindwing blackish with lighter fringes. Expanse of wings: 36 mm. South East Peru (Carabaya), Ecuador.
- desiota*. **E. desiota** Dyar. Forewing deep purple black, a small spot in the base of the cell, the bordering of the maculae and the marginal area dull bronze coloured, with blackish transverse lines: the proximal one single, composed of 3 bows, the distal one indistinctly double, dentate; from the reniform distal macula a faint median shade extends towards the proximal margin. Hindwing blackish-brown, in the disc lighter with a dark discal spot and veins. Expanse of wings: 36 mm. Mexico (Hidalgo).
- tebota*. **E. tebota** Dyar is larger than the very similar preceding species, more violettish blackish, the marginal area and the maculae like there blackish-bronze; the transverse lines are distinct, of a deep black, behind the

anterior line a narrow coniform macula, the distal line strongly dentate; the undulate line is composed of small black sagittae. Hindwing blackish-brown with a lighter disc. Expanse of wings: 42 mm. Mexico (Hidalgo).

E. moesta Wkr. (= *dolens* Drc., *fornax* Drc.) (20 i). This species and the two following exhibit the *moesta*. same structure as *christa* and its allies, but they have a dentate distal margin. Forewing red-brown, strewn with a darker colour, with indistinct, dentate, double transverse lines, behind the distal line double rows of dots with small maculae being pupilled blackish, a faded median shade and darker marginal area with an ochreous-yellow small spot at the anal angle. Hindwing dark brown. Mexico to Venezuela.

E. niveipuncta Schs. (21 a) is very similar to *moesta*, but easily discernible by a white, not yellow spot *niveipuncta*. at the anal angle of the forewing; the transverse lines are not double, but single, broader and more blurred. From Mexico to Panama.

E. lindigii Fldr. (20 i) has more ochreous-brownish wings and no light anal-angular spot, the veins *lindigii*. of the marginal area and internerval stripes are striped darker, the transverse lines are more marked by dots on the veins. Colombia.

E. euchroa Hmps. (= *magnifica* Zerny) (21 c) has ochreous forewings dusted with red-brown, in the *euchroa*. ♀ suffused with a leaden grey colour, with dark red-brown maculae, the ring-macula obliquely oval, in the ♀ almost touching the reniform macula which is on the median produced towards the base, distally below dotted white with a dark brown spot behind it and above it at the costal margin. Transverse lines double, red-brown, at the costal margin thicker and black with dots on the veins; the undulate line consists of small yellowish spots which are proximally bordered with red-brown spots growing larger towards the costal margin. Hindwing greyish-brown, in the ♀ darker. Colombia and Peru.

E. monopis Dyar (20 k) is a smaller blackish species with broad wings, with a likewise slightly dentate *monopis*. distal margin and hardly prominent markings, the ring-macula shows a slight leaden lustre, the distal transverse lines are somewhat darker than the ground, the only distinct marking is the oval white reniform macula with a yellowish linear marking in the centre. Hindwing brownish-grey, towards the base lighter with a dark central spot. Mexico.

E. subolivacea Hmps. (20 k) has long lateral hair-tufts on the abdomen, touching those of the ventral *subolivacea*. side; the same is the case in the following 7 species; besides the cell of the forewing beneath is thickly covered with downward hair. Forewing greenish-ochreous, scantily strewn with dark, with punctiform transverse lines without maculae. Hindwing yellowish-white, at the costal and distal margins brownish. Brazil.

E. atrisignata Jones. Forewing ochreous-yellowish brown, the transverse lines marked by dots on the *atrisignata*. veins, the anterior line only submedianly; both the upper maculae are black as well as a dot in the base of the cell. Hindwing ochreous-brownish, towards the base iridescent, with dark veins. Expanse of wings: 34 mm. Brazil: Castro (Paraná).

E. melanosticta Hmps. (21 a). The hairing of the cell of the forewing is absent here as well as in the *melanosticta*. following species belonging to this group. Forewing purple brown, strewn darker with rather indistinct double transverse lines, the two posterior lines separated afar; the reniform macula is marked by some white scales on a red-brown spot, before it there is a dark median shade; before the white undulate line there are minute black sagittae, larger ones above and below the middle radial branch. Hindwing yellowish-white, the veins and margin brownish, with purple reddish fringes. Brazil to Paraguay.

E. purpurigera Gn. (21 a) is recognizable by the chocolate upper maculae being below confluent in *purpurigera*. the shape of a V on the greyish-white forewings which are dusted with olive-brownish and purple reddish; in the ♂ the red tint predominates, the maculae are of a deeper black, the ring-macula is smaller and does not quite extend to the distal macula. Hindwing greyish-brown. Brazil.

E. duruscula Schs. Forewing light violettish-brown, scantily strewn with black, with black transverse *duruscula*. lines, the anterior line being nebulous, the posterior line indistinct, behind it the veins are black and strewn with grey; the very large upper maculae are surrounded with a light yellowish-reddish; the yellowish-reddish undulate line is straight, behind it the veins of the marginal area are likewise black and strewn with a greyish white. Hindwing thinly scaled, brownish-grey, with yellowish fringes. Expanse of wings: 31 mm. Costa Rica (Volcano of Poas).

E. nigripars Schs. (21 b). Forewing ochreous-reddish with indistinct transverse lines, the posterior *nigripars*. lines dentate with dots on the veins behind them, and with a dark median line; the large reniform macula is in an ochreous-yellowish ring, above with 2 black spots connected by a bent line, below pupilled black; before the ochreous yellow undulate line there are black dots. The ♂ is more tinted purple-reddish. Hindwing brownish-grey, in the ♂ with a hyaline stripe below the cell. Mexico, Costa Rica, Ecuador.

E. diopera Hmps. (20 k). Forewing light ochreous-yellowish, dusted with red-brown and strewn with *diopera*. black, with lighter striped veins; the transverse lines are light brownish with black dots on the veins on them; instead of the ring-macula a black dot in the centre of the cell, the reniform macula strongly strangulated in the middle, and except this central part finely surrounded with black, filled up with a reddish ochreous colour; a blackish median line is almost rectangularly broken at the lower cell-angle; the undulate line begins black at the apex, turning then brown, distally reddish-ochreous, near and parallel to the posterior transverse line. Hindwing light ochreous-brownish. Expanse of wings: 36 mm. Ecuador, Peru.

- dilissima*. **E. ditissima** *Wkr.* (21 b) is a common, beautiful, large species, of a bright orange strewn with fiery red, at the proximal margin and in the marginal area dusted with greyish-brown, with dentate transverse lines, easily recognizable by the white dots distally bordering on the reniform macula. The whitish hindwing is brownish on the veins and at the margin. Mexico to Colombia.
- fuscescens*. **E. fuscescens** *sp. n.* (21 a) is extraordinarily similar to *dilissima*, but it seems anyhow to be a different species, because the reniform macula is differently shaped; the ground-colour of the forewing is a dark greyish brown without any yellow and red tints; the distal white bordering of the reniform macula is quite straight and is absent on the proximal side except a white dot at the lower end. From Costa Rica (Volcano of Irazu).
- janeira*. **E. janeira** *Schs.* (21 b). Forewing brownish-red, except the proximal area and the postmedian area dusted with a greyish-brown, with very indistinct, posteriorly dentate transverse lines; maculae indistinctly defined, the reniform macula above reddish, in the lower half pupilled brownish-grey with a white dot distally; the undulate line consists of small, indistinct, darker spots. Hindwing brownish-grey. Brazil.
- perrubra*. **E. perrubra** *Hmps.* (23 c). Forewing fiery red, the costal margin and cell dusted with brown and strewn with white; the double brown transverse lines are rather indistinct, the anterior line at the costal margin proximally scaled white, the posterior line finely dentate and filled up somewhat whitish; the maculae are white and finely surrounded with brown. The reniform macula is pupilled brown, with a white line in the centre and on the median proximally produced, and from it a faded, oblique median shade extends to the proximal margin; the undulate line consists of white small lunae bordered with brown. Hindwing brownish with red fringes. Expanse of wings: 44 mm. Peru.
- punctulum*. **E. punctulum** *Gn.* (21 b). The ochreous forewing is dusted with red-brown, the transverse lines are double, the posterior line is extended into dots on the veins; instead of the ring-macula a minute blackish spot, the reniform macula is yellowish, below brownish-grey with 2 white dots distally; the undulate line is yellowish with black dots and darker striped veins of the marginal area behind it. The yellowish-white hindwing is dusted with a brownish grey. Brazil. — The form **desnuda** *Dogn.* from Ecuador is of a purer brown colour.
- eugrapha*. **E. eugrapha** *Hmps.* Forewing light reddish, thickly strewn with a dark red-brown, in the marginal area dusted with brown, with black transverse lines bordered with a light red, the posterior line double, dentate; the large maculae are pupilled blackish-brown, in light red rings and finely surrounded with black, the reniform macula with two white dots below, between both a dark brown median shade; the white undulate line is on both sides spotted black. Hindwing reddish-brown. Expanse of wings: 40 mm. Peru (Uruhuasi).
- polygrapha*. **E. polygrapha** *Hmps.* Forewing light red-brown, strewn darker with double brown transverse lines the posterior of which is distally extended into dots on the veins; the ring-macula is marked by 4 black dots with a black central shade, the reniform macula is laterally dotted black, below filled up with black and with a white dot in the lower cell-angle, with a flawed median shade between both maculae; the undulate line consists of small blackish spots. Hindwing reddish-brown with yellowish-white fringes. Expanse of wings: 40 to 46 mm. Peru. — From Bolivia (Cuesta de Cillutincara) is a smaller, darker, more greyish-brown form before us, with a slight coppery reddish reflection: **cuprina** *form. nov.* (23 c) which presumably belongs to it. — Apparently the same species is in numbers of both sexes before us, having been taken by FASSL, from the Quindiu Pass in Colombia and also from Mt. Tolima, and exhibiting a much darker form which I denominate: **monotona** *form. nov.* (23 c); it is more blackish-brown with a coppery tint and the white scaling is almost entirely absent except in the reniform macula.
- advena*. **E. advena** *sp. n.* (23 d) resembles in the ♂ the European *Aplecta advena* (Ad. 3, t. 19 a). Forewing red-brown, dusted with purple grey, with single blackish transverse lines and dots on the veins behind the distal line; the maculae are finely encircled with dark, the reniform macula is filled up with reddish or yellowish and in the lower end pupilled black; the undulate line is marked by more or less double rows of black moon-spots growing larger and deeper black behind the cell. Hindwing brownish-grey with yellowish fringes parted by a black line. The ♀ shows much clearer markings on a lighter yellowish-brown or reddish-brown ground. In both sexes from Bolivia (Cuesta de Cillutincara), taken by FASSL.
- sutrix*. **E. sutrix** *sp. n.* (23 d) reminds us of a large *Perigea sutor*; forewing loam-coloured yellowish, densely strewn with black, with double dentate transverse stripes filled up with a scarcely lighter colour, and the upper maculae incompletely surrounded with dark, the reniform macula in the lower half pupilled blackish and on either side with one indistinct white dot; the undulate line consists of quite indistinct lighter, small moon-spots proximally bordered with a darker colour; the veins in the marginal area are very scantily strewn with white. Hindwing dark brownish-grey with light yellowish-white fringes parted by a dark line. 1 ♀ from Pacho (Colombia) at an altitude of 2200 m.
- mucorea*. **E. mucorea** *sp. n.* (23 d). Thorax and forewing of a warm red-brown, metathorax of the colour of a grey-horse like the markings which are strewn on the wings in the shape of spots and border on both sides on the dentate dark brown transverse lines, behind the distal one of which there are blackish-grey and grey-horse coloured dots on the veins; grey are besides the fillings of the maculae centrally pupilled red-brown as well as large, roundish spots partly strewn with blackish in the marginal area behind the cucullately dentate undulate line, the largest being situate at the apex; the discal spots recede somewhat,

so that behind them there is still room for 3 small ones at the margin. Hindwing brownish-grey, the fringes at the ends whitish. From Costa Rica (Voleano of Irazu) in the typical form. Somewhat larger specimens with confined small grey spots from East Colombia (Upper Rio Negro). — Very different specimens: *fucata* form. *fucata*. nov. (23 e) originate from the West Colombian Cordilleras (Rio Aguaca Valley) from an altitude of 2000 m: here the ground-colour is not red-brown, but blackish-brown, the small grey spots are darkened so that they are but little prominent.

E. trinotata sp. n. (23 e) may belong near *advena* (23 d). Forewing violettish-grey, the thorax, *trinotata*. the extreme costal margin and proximal margin, as well as the fringes are reddish-yellow; transverse lines indistinctly double, the posterior line quite extinct, only here and there just as if scribbled down; the most distinct is a broad blackish median shade traversing the lower end of the reniform macula and being here almost rectangularly broken; the maculae are very finely encircled with blackish-brown and in concentric rings; the undulate line is only marked by 3 jet-black subapical spots, the lowest being the largest. Hindwing brownish-grey with yellowish fringes. 1 ♀ from Pacho (East Colombia).

E. limonis Schs. (23 a). Forewing brown with black transverse lines, at the costal margin double, *limonis*. the posterior line dentate with double dots on the veins behind it; the large reniform macula is in the centre strangulated, finely encircled with white and with a white line in the centre; the undulate line consists of white small spots being inwards bordered with black, with a larger one at the anal angle. Hindwing blackish-brown, towards the base lighter. Expanse of wings: 44 mm. From the similar *monilis* it is separable by the other reniform macula and the darker hindwings. Costa Rica.

E. monilis Gn. (= *dotata* Drc.) (21 c) has coppery reddish forewings with black, indistinct transverse *monilis*. lines, the posterior line being dentate, with dots on the veins behind it, and a faded dark median line; the small round ring-macula is finely encircled with black, with 2 white dots above, the ochreous-yellowish reniform macula is strewn with black and in the centre strangulated, encircled with whitish and black; the undulate line consists of small black spots with white dots on them, the largest at the anal angle. Hindwing whitish, on the veins and margin brownish. From Mexico to Panama; — in Brazil occurs a less reddish form: *trocas* Schs.; *trocas*. also in Paraguay.

E. cymax Dyar (21 b). The broad, almost quadrangular forewing is quite light reddish-brown with *cymax*. fine double red-brown transverse lines filled up with a somewhat lighter colour; the ochreous-yellow reniform macula is pupilled with 2 black dots, the upper one distinct, the lower faded. The undulate line is light, undulate. The hindwing is blackish-grey, with light reddish fringes. From Mexico (Misantla) in June.

E. glaucistis Hmps. (21 i). Forewing greyish-brown, with fine undulate transverse lines and a faded *glaucistis*. median shade; maculae in fine whitish rings. The reniform macula in the centre strewn with black; before the indistinct light undulate line there are small black spots, the largest at the costal margin, proximal margin and in the centre. Hindwing ochreous-brown. Brazil.

E. azucara Schs. (21 b) has ochreous-brownish forewings with darker transverse lines, the posterior *azucara*. line finely dentate and with darker pupilled maculae encircled with yellowish, the ring-macula obliquely elliptical, the reniform macula strangulated, below distally dotted white, between both with a dark median shade; instead of the undulate line small dark and yellowish sagittae. Hindwing brownish-grey. Brazil.

E. lobata Hmps. (= *agnata* Drc. part.) (21 e). Forewing at the base convex, below at the costal *lobata*. margin with long fringes, the cell and the space behind it clad with hair turned downwards, the hindwing in the basal half roughly haired. Yellowish brownish-grey with double transverse lines filled up with a lighter colour, behind the posterior line with black, grey-dotted streaks on the veins; maculae pupilled reddish, in whitish rings, the reniform macula proximally produced on the median; the lighter reddish undulate line is proximally darker. Hindwing brown. From Costa Rica.

E. remipes Zerny has similar wings as the preceding, on the forewing beneath the cell and a stripe *remipes*. along the proximal margin are covered with raised scales. Forewing of a fiery ferruginous-red colour, towards the base orange-yellow with brown veins, before the margin strewn a little with white, with brown transverse lines, the posterior line rather indistinct, very sharply dentate; the maculae are ferruginous-red mixed with orange-yellow, the reniform macula is distally concave, below with a white dot; a brown median shade is indistinctly present; the undulate line consists of a row of triangular, dark brown small spots distally pupilled orange-yellow. Hindwing greyish-brown. Posterior tibiae outside with a brush of long, hair-shaped, yellowish scales. Expanse of wings: 33 mm. Bolivia (Rio Songo).

E. mesostrigata Hmps. (21 e) is like the next species distinguished by very long anal valves, the *mesostrigata*. hairy cover of the forewing similar as in *lobata*, but the hindwing only with some long hairs at the base. Forewing purple reddish brown with double transverse lines, like in *lobata*, the costal-marginal part of the median area light reddish with dark striped veins, the maculae small, the reniform macula above extended; before the brownish-spotted undulate line small black sagittae. Hindwing brownish-grey. Guatemala, Panama.

E. sublecta Dyar (21 c) resembles *mesostrigata*, but it is smaller, redder and without the light, dark- *sublecta*. veined costal-marginal part of the median area, basally and subterminally blackened. Hindwing darker. From Mexico (Zacualpan) in August.

rubicundula. **E. rubicundula** Schs. exhibits olive-brownish forewings with a red tint, a fine pinkish-reddish costal margin and proximal margin, at the base of the cell with a small red spot, antemedianly below the cell another one with traces of a line to the proximal margin, behind it a red median line; the large reniform macula is encircled with red, distally spotted dark; the posterior double transverse line with a lighter filling is likewise red; instead of the undulate line red scales on the veins, behind them the marginal area is strewn with red, with black veins strewn with white. Hindwing brownish-grey with pink fringes. Expanse of wings: 29 mm. Costa Rica.

cynica. **E. cynica** Gn. (= *nimia* Gn., *candens* Gn., *tecta* Wkr.) (21 d) has brownish-grey forewings more or less dusted with purple reddish, with black transverse lines being on the averted sides bordered with grey, behind the distal line with dark streaks on the veins and with large maculae surrounded with whitish; the grey undulate line is proximally darker. Hindwing brownish-grey, towards the base lighter. From Canada to Colorado.

enages. **E. enages** Dyar (20 h, i) in its exterior almost resembles a grey, small *crenulata* (20 i) with very feeble lighter transverse lines, a small, oblique ring-macula and hardly strangulated reniform macula; the distal transverse line is almost rectangularly bent behind the cell, the dentate marginal line is absent, a median shade is mostly very distinct. The ♀ which, however, may not belong to it, is more reddish, with a larger ring-macula and a more strangulated reniform macula. Mexico (Orizaba, Coatepec).

curvirena. **E. curvirena** Gn. (21 d) has the hairy cover of the forewing beneath confined to the cell. Forewing greyish-brown with a light reddish tint and lighter transverse lines on both sides bordered with a darker colour, before and behind them dark streaks on the veins, interrupted by white; the large maculae encircled with light are more or less contiguous, behind the reniform macula with a velvety brown spot and whitish veins; the pale yellowish undulate line is proximally bordered with a darker colour. Hindwing brownish-grey. From Brazil and Paraguay. — The northern form: **spurcilinea** Wkr. (= *infirmata* Drc.) is beneath without any reddish hairing on the forewing. Mexico to Venezuela. — A very common species.

intractata. **E. intractata** Morr. (= *fidelis* Grt.) (21 d). Forewing grey, strewn with brown and suffused with reddish, the veins striped grey, with rather indistinct lighter transverse lines, before the posterior line near the proximal margin and behind the anterior line in and below the cell with small black spots; the large maculae are in fine whitish rings; undulate line whitish. Hindwing white, dusted with brown. United States.

cartagensis. **E. cartagensis** Schs. resembles *goniostigma* (21 d). Forewing brown, head and collar brownish Isabel-coloured; behind the velvety brown subbasal line a large black spot below the cell with a streak connecting it with the anterior transverse line; the dark brown maculae are encircled with velvety black and connected by such a band; behind the double distal transverse line there is a double row of velvety black dots; the subterminal line is double, too, the distal part behind the cell thickened. Hindwing whitish, veins and margin dark, fringes pinkish-reddish. Expanse of wings: 30 mm. Costa Rica (Cartago, Sixola).

goniostigma. **E. goniostigma** Schs. (21 d) is somewhat similar to *curvirena*, but it has a more reddish tint, in the basal area more ochreous-yellowish, the maculae are deep chocolate-brown, in yellowish rings, the reniform macula S-shaped; before the yellowish undulate line being proximally bordered with red-brown there is an ochreous-yellowish band, the marginal area is more brownish-grey. Mexico.

nigridorsia. **E. nigridorsia** Jones has light brown forewings, in the basal and marginal areas darker than in the discal area, here with a dark median shade which is angular on the median and contains in the cell the large, broadly faded, light-ringed reniform macula; the ring-macula is small, likewise in a light ring. Hindwing ochreous-brown with darker veins. Expanse of wings: 40 mm. Brazil: Castro (Paraná).

approximans. **E. approximans** Jones (21 e) is light red-brown, in the discal area darker with double, straight transverse lines being convergent towards the proximal margin, and between them with a dark median shade; the darker maculae are in light rings; the light subterminal line is undulate. Hindwing white, at the costal margin and apex dusted with brown, distal margin brown. Brazil (Castro).

albipuncta. **E. albipuncta** Schs. (21 d) has long hair at the proximal margin of the hindwing and at the base on the under surface. Forewing purple brown, dusted with grey, with rather indistinct transverse lines, the distal line dentate and with dots on the veins behind it, and with small maculae encircled with blackish, the ring-macula red, the reniform macula white; instead of the undulate line there are small black and yellowish strigiform spots. Hindwing yellowish-brown. Mexico.

dyschoroides. **E. dyschoroides** Schs. (21 d). Forewing purple brown with double transverse lines, the distal line only single with a row of dots on the veins behind it; the ring-macula is purple red, the reniform macula in the lower half black-pupilled, distally with an orange-yellow, white-dotted spot; between both a spot-shaped brown median shade; the light reddish undulate line is proximally bordered with brown. Hindwing brownish-grey. Mexico.

aenescens. **E. aenescens** Dogn. Forewing lilac-brown with a coppery reflection, particularly in the marginal area, with copper-brown, double, undentate transverse lines, a small round ring-macula and oblong reniform macula, pupilled-violet; also the coniform macula is present; the violet undulate line is distinct in the ♀, absent in the ♂. The brown hindwing is in the disc whitish with traces of a discal spot. Expanse of wings: 33 to 35 mm. Costa Rica (Volcano of Irazu), taken by FASSL, at an altitude of 2400 m.

E. rubripuncta Schs. (21 f) has almost the whole costal-marginal area of the forewing beneath covered with hair being turned downwards, whilst the median which is continued towards the anal angle as a bent row, is covered with short hair being turned upwards, the hindwings exhibiting a very similar arrangement. Forewing chestnut-brown, with indistinct single transverse lines, the posterior line dentate, and with a small, vermilion reniform macula, which is white in the form: **pseudostigma** Dyar (21 e); instead of the undulate line very small black sagittae. Hindwing brownish-grey. Mexico and Costa Rica. *rubripuncta*, *pseudostigma*.

E. confluens Hmps. (= agnata Drc.) (21 e). Costal margin as in *rubripuncta*, but the cell of the forewing with loose hair being turned downwards, the basal half of the hindwing covered with rough hair. Forewing blackish-brown, dusted with silvery purple, with a black basal ray and cell and with black internerval streaks behind it; transverse lines double, filled up with reddish; the small maculae are below connected; the undulate line is proximally bordered with small black sagittae. Hindwing yellowish-brown. Guatemala, Costa Rica. *confluens*.

E. volcania Schs. Forewing dark brown with a silky lustre, dusted with steel-grey, at the distal margin with a bronze lustre, with fine, deep dark brown transverse lines, the posterior line dentate; also the maculae are surrounded with dark brown, the reniform macula is bronze-coloured; the dark subterminal line is undulate. Hindwing brownish-grey with a silky lustre. Expanse of wings: 36 mm. Costa Rica (Volcano of Turrialba). *volcania*.

E. augur Zerny. Forewing yellowish-grey with a silky lustre, scantily strewn with a bluish white, with dark brown transverse lines, the posterior line being double; the maculae are large, yellowish-brown, pupilled grey, the reniform macula above distally expanded, below distally with a fine white dot. Undulate line yellowish, proximally broadly bordered with dark brown. Hindwing grey, towards the base lighter. Expanse of wings: 35 mm. Described according to 1 ♀ from Bolivia (Cuesta de Cillutineara). *augur*.

E. melanops Dyar (21 e) has dark ash-grey forewings with a deep black ring-macula and reniform macula; the transverse lines are rather indistinctly double, the anterior line with a small black coniform macula, the distal one in the distal segment dentate with short streaks on the veins behind it; the marginal area is darker with the light narrow undulate line therein. The grey hindwing is brightened up towards the base. Mexico (Zacualpan) in August. *melanops*.

E. cracerdota Dyar (21 e) in its exterior is very similar to the smaller light forms of the *lanaris-crenulata* group (20 h, i). Forewing grey with a brownish tint, with whitish, almost straight transverse lines being on the sides facing each other bordered with a darker colour, the posterior line behind the cell sharply angled with a row of quadrangular, blackish-brown small spots behind it; the maculae are represented by large whitish rings, the ring-macula is oblique, the reniform macula distally concave; the distinct white undulate line runs straight. Hindwing brownish-grey with darker veins. Mexico (Zacualpan), August till October. *cracerdota*.

E. cachia Schs. is allied to the following *infirmia* (21 f). Forewing light brown, subterminally dusted grey, with fine, black, double transverse lines being filled up with a lighter colour, before the anterior line a submedian black dot, the posterior line above angular, then straight, followed by a double row of dots; the undulate line is double, too; in the median area there is an undulate black median shade; on the margin a light lunular line with black dots between the veins. Hindwing brownish-grey with light fringes. Expanse of wings: 32 mm. Costa Rica (Caehi). *cachia*.

E. infirmia Gn. (21 f) exhibits, like the large following group as far as *marginalis* inclusively, on the forewing beneath few long hair turned downwards in the cell. Forewing light greyish-brown with dark transverse stripes being bordered with light grey on the averted sides, and black, white-dotted streaks on the veins behind the distal transverse stripe; the large, obliquely elliptic maculae are in light rings, the undulate line is light. Hindwing white with brownish veins and margin. The ♀ is of a purer brown and exhibits darker brown hindwings. Brazil, Paraguay. *infirmia*.

E. evanida Schs. is light brownish Isabel-coloured, head and collar in front almost white, the forewing with fine black transverse lines, the posterior line forming deep bows between the veins, being dotted on the veins; ring-macula and reniform macula yellowish-white, the latter traversed by a faint brownish shade; the undulate line is still somewhat lighter; at the anal angle a dark marginal line. Hindwing dark brownish-grey. Expanse of wings: 29 mm. From Costa Rica (Volcano of Poas). *evanida*.

E. pantostigma Dyar (21 f) is on the forewing ochreous-brown varying in all shades to chestnut-brown and blackish-brown, with indistinct, black, double transverse lines, and dots on the veins on the posterior line and a dark median shade; the maculae are filled up with black, the undulate line is black, undulate, beginning with a blackish costal-marginal spot; the extreme marginal area is blackened. Hindwing brownish-grey with reddish fringes. Mexico (Zacualpan) in July. *pantostigma*.

E. ratelus Dyar. Forewing dark grey with a violet tint with a broad black median shade extending to the black-filled reniform macula, and with dentate, black, extinct transverse lines; behind the distal line a row of white dots; behind the irregular undulate line the marginal area is subcostally and in the lower half shaded with black; the ring-macula is indistinctly darker. Hindwing dark brownish-grey. Expanse of wings: 29 mm. Mexico (Zacualpan) in May. *ratelus*.

E. violascens Schs. (21 e). Forewing light purple reddish strewn with dark and rather indistinct double transverse stripes with short, dark streaks on the veins behind the distal line; the maculae are encircled *violascens*.

with white and filled up with red-brown, the ring-macula is obliquely elliptical, the reniform macula strangled; from the latter a faded median line extends to the proximal margin; the whitish, finely dentate undulate line is situated on a brown band. Hindwing white, in the marginal half brownish. Mexico.

strigifacta. **E. strigifacta** Dyar (21 f) is a small species with narrow wings, greyish-brown, mixed with ochreous-yellowish and blackish tints, subbasally and before the undulate line also with red-brown dusting; the anterior transverse line is double, the posterior line followed by a row of dots on the veins; ring-macula extinct, the reniform macula being a small blackish luna; undulate line yellowish, broken. Hindwing light yellowish, distally brownish. — An aberration being very uncommon among the *Eriopyga*, ab. **albifusa** ab. nov. (21 g) is before us in a great number of specimens; here the whole discal area except a large triangular costal spot, is of a pure white as well as an oblique apical patch being coherent with it. — Mexico (Zacualpan).

ropilla. **E. ropilla** Dogn. (21 g). The red-brown forewing is subcostally and on the median somewhat scaled white; the transverse lines are indistinct, the distal line is dentate, with dots on the veins; instead of the ring-macula a minute white hook-like spot, the brownish-grey reniform macula is strewn with white and above and below produced towards the base, above it there is a large costal-marginal spot; the undulate line consists of small black spots. Hindwing brownish-grey. Ecuador and Colombia.

angustimargo. **E. angustimargo** Dyar (21 g) is a small, yellowish-grey species dusted with a darker colour; the maculae are absent except the reniform macula which appears as a small extinct spot of the ground-colour in a darker spot; the transverse lines are extinct, dentate, only the undulate line is distinctly dark, spotted. Hindwing brownish-grey with a dark median spot. Mexico (City), in September, October.

lindseyi. **E. lindseyi** Benj. Forewing uniformly reddish with a yellowish tint and an intense silky lustre with double transverse lines filled up somewhat more yellowish, the posterior line forming a distinct S, behind it more or less distinct traces of yellowish dots on the veins; the small round ring-macula and the reniform distal macula are likewise filled up with a more intense yellow, the reniform macula below with 2 white dots which are occasionally almost confluent owing to white scalings; behind the undulate line at the margin black interval dots. Hindwing whitish, dusted with blackish-brown. The species recalls *vecors* (21 h), *irrorata* (21 g) and *puerilis* (21 i), and was taken in New Jersey in May, July, and September.

irrorata. **E. irrorata** Sm. (21 g) is light reddish-brown, the veins are strewn somewhat blackish; behind the light, undulate subbasal line there is a broad darker band; the ring-macula is a small yellowish ring with a black pupil, the small reniform macula is shaped like an 8; the posterior transverse line is confluent with its distal margin, farther below with the median shade; before the yellowish undulate line being proximally bordered with greyish-brown there are in the centre small black sagittae. Hindwing yellowish brownish-grey. Canada to California.

eccarsia. **E. eccarsia** Dyar (21 g) is a very small, lustrous black species; the only marking is the large oblique reniform macula which is narrow, white, ring-shaped, distally very slightly concave; towards the apex at the costal margin some small white streaks. Hindwing whitish, in the distal half blackish. Mexico (Zacualpan) in August.

xera. **E. xera** Dyar (21 g) is one of the smallest species, of a monotonous blackish brown, with entirely faded thick markings, behind the distal transverse line with dark dots on the veins, instead of the ring-macula a dot, the reniform macula in a light ring; the light undulate line is almost straight, proximally bordered with black. Hindwing brownish-grey, in the lighter cell with a small dark median spot. Mexico (Zacualpan), in June and July.

borthorodes. **E. borthorodes** Dyar (21 g) is similar to *xera*, somewhat larger, the transverse lines on the averted sides bordered with lighter spots; the maculae are filled up with a somewhat darker colour and in light rings, the reniform macula below pupilled blackish; the rather broad light undulate line forms below the costal margin a tooth proximad, behind it the marginal area is somewhat lighter than the other ground-colour. Hindwing as in *xera*. Mexico (Zacualpan) in June.

complexens. **E. complexens** Dyar. Forewing violet reddish-brown, with light loam-coloured lines, the distal line with a subcostal tooth and a double row of dots behind it; the large maculae have darker fillings and light rings; the cell and the costal margin subterminally shaded with reddish; the undulate line is straight, only forming an angle below the costal margin; marginal area darkened with black marginal dots. Hindwing blackish-brown with reddish fringes. Expanse of wings: 31 mm. Mexico (Hidalgo).

rea. **E. rea** Dyar has pinkish-brown forewings strewn with blackish; instead of the anterior transverse line with some black dots, behind the distal line a row of black dots; the round ring-macula is filled up with light, the reniform macula with dark, above more reddish, below blackish, and in a light ring; basally, in the discal and marginal areas one dark transverse shade each; the light undulate line forms 2 slight bows. Hindwing light brownish-grey, towards the margin and on the veins darker. Expanse of wings: 27 mm. Mexico (Hidalgo).

simplex. **E. simplex** Dyar. Forewing purple with a light reddish costal part, macular and marginal area darker with single, fine light transverse lines; the light, distinct undulate line is uniformly bent and runs parallel to the distal margin. Hindwing dark greyish-brown with a somewhat darker discal spot. Expanse of wings: 28 mm. Mexico (Hidalgo).

E. rubifer Dyar. Forewing of a light and clear pinkish brown, strewn scarcely darker; all the 3 maculae *rubifer*. are broadly scaled ferruginous-red; the proximal transverse line is double, black, with 2 black dots on the proximal-marginal vein, behind the broken distal line there is a double row of black dots on the veins, the undulate line is uniformly bent parallel to the distal margin and of a fiery red, edged with brown, the marginal area behind it is dusted with brown, with a black dentate marginal line. Hindwing blackish-brown with red fringes. Expanse of wings: 30 mm. Mexico (Hidalgo).

E. umbrifer Dyar has light ochreous-brown forewings with a broad blackish-brown longitudinal shade *umbrifer*. below the cell from the base to the undulate line, extending behind the cell to the costal margin and covering the reniform macula, and narrowly shading also the marginal area; all the markings extinct except the distal bordering of the reniform macula which is filled up with dark and traversed by a light colour. Hindwing blackish-brown with a light costal margin and a small blackish discal spot. Expanse of wings: 30 mm. Mexico (Hidalgo).

E. milio Dyar. Forewing light loam-coloured grey, at the costal margin, median shade and marginal *milio*. area shaded with blackish, with black transverse lines, the proximal line composed of 3 bows, the distal one being dentate with a row of dots behind it; the ring-macula is absent, the reniform macula pupilled black, in a light ring, in the upper half and on the discal fold with light dots; the light, irregular undulate line is situated near the margin. The light hindwing is darkened on the margin and veins. Expanse of wings: 32 mm. Mexico (Hidalgo).

E. nisio Dyar. Likewise loam-coloured grey, strewn with blackish, on the costal margin and cell blackish, *nisio*. very similarly marked, but the transverse lines bordered with a light colour, and with a round, light ring-macula bordered with black and pupilled black, the reniform macula quite similar as in *milio*; the distal transverse line is dentate and with black and white dots behind it; before the narrow light undulate line with small, black, wedge-shaped spots, the marginal area blackish. Hindwing brownish-grey. Expanse of wings: 27 mm. Mexico (Hidalgo).

E. pansapha Dyar exhibits light purple grey forewings, scantily strewn with black, with double blackish *pansapha*. transverse lines more or less appearing as double rows of dots, particularly the distal line; both the upper maculae all round dotted black, the reniform macula distally spotted white; undulate line absent. Hindwing diaphanous whitish, on the veins and margin brownish. Expanse of wings: 28 mm. Mexico.

E. vecors Gn. (= *enervis* Gn., *predeuns* Wkr., *togata* Wkr., *velata* Wkr., *nitens* Gr.) (21 h). Forewing *vecors*. red-brown, tinted purple, and particularly on the veins strewn with white, with undulate, rather indistinct transverse lines and dots on the veins behind the distal line; the maculae are absent except the minute reddish luna representing the reniform macula; the indistinct undulate line is yellowish, proximally bordered with brown and with some black dots in the centre of the wing. Hindwing yellowish-brown. — In the form: **griseo-griscocincta**. **cincta** Harv. the purple brown forewing is more intensely strewn with white, the transverse lines are distinctly bordered with white. From Canada and the North Eastern United States to the Mississippi.

E. diplopis Dyar (21 h). Thorax black, with a contrastingly ferruginous brown collar; forewing purple *diplopis*. blackish, with extinct transverse lines; the reniform macula is white, proximally broadly margined with ferruginous-yellow, the large, oblique, black-ringed ring-macula of the ground-colour, between them the cell is filled up with black; the undulate line is only visible below the costal margin as a black stripe, from which a black line on the fold extends to the reniform macula. Hindwing light brownish-grey, towards the margin darker. — In **aleuca** *form. nov.* (21 i) the reniform macula is not white. From Mexico (Zacualpan) in June *aleuca*. and July.

E. calceolaria Streck. is allied to *vecors* (21 h), but of a more greyish-brown ground-colour with rather *calceolaria*. dense coarse whitish strewing; the undulate transverse lines are single, behind the distal line with black dots on the veins; the maculae are marked by small darker spots; before the undulate line being bordered with a darker colour the subterminal area is still more densely strewn with white. Hindwing greyish-brown. From New York.

E. imora Streck. resembles more the following *virgula*. Forewing greyish-brown, coarsely strewn *imora*. with black, with rather indistinct transverse lines, the posterior line dentate with black dots on the veins behind it; both the upper maculae are encircled with a lighter colour, the reniform macula is pupilled somewhat darker, between them a darker median shade passes through; before the light undulate line there are some small blackish sagittae. Hindwing yellowish-white, on the veins and margin smoky. Wisconsin.

E. virgula Gr. (21 h). Forewing dull reddish-brown with indistinct, undulately dentate transverse *virgula*. lines and a light undulate line with small black sagittae before it; of the maculae only the narrow reniform macula with an indistinct whitish ring is present, before it a faded dark median shade. The yellowish-white hindwing is dusted with a brownish grey except the basal area. Colorado, New Mexico.

E. poasina Schs. is allied to the following *pyropis* (21 h). Forewing lustrous blackish-brown, with *poasina*. broad, lighter brownish transverse lines being almost straight; the ring-macula is a small black spot, the reniform macula quadrangular, light reddish-yellow, ringed and strewn with black; the fine light undulate line is hardly visible. Hindwing brownish-grey with reddish fringes. Expanse of wings: 33 mm. Costa Rica.

- pyropis.* **E. pyropis** *Hmps.* (21 h) has purple brown forewings dusted with a brick-red colour, with darker veins and single transverse lines, the posterior line being dentate; the 8-shaped small reniform macula is whitish, above dusted brick-red; undulate line hardly lighter. Costa Rica.
- ignescens.* **E. ignescens** *Hmps.* (21 h). Forewing dull brown, suffused with purple red, with indistinct transverse lines and a small ochreous-yellow reniform macula dusted with vermilion, the other maculae being absent; the ochreous-yellowish undulate line is proximally bordered with dark brown. Hindwing greyish-brown. Mexico.
- iole.* **E. iole** *Schs.* (= *oviduca Drc.*) (21 h) is always easily recognizable by the fine, yellowish-white costal margin. Forewing light reddish-brown, the veins scantily strewn with whitish, the transverse lines rather indistinct, undulate, the maculae dark, encircled with whitish, the reniform macula strewn with white; the undulate line consists of small whitish crescents with brown small sagittae before it. Hindwing light brownish. Mexico, Guatemala.
- pariole.* **E. pariole** *sp. n.* (23 d) is somewhat similar, but without the distinct yellowish-white costal margin. The reddish-brown forewing is basally, in the costal-marginal area as far as the undulate line and in the indistinctly defined small macular spots lighter yellowish-brownish; transverse lines quite extinct, marked by small, faded, dark spots on the veins; the yellowish, quite indistinctly defined maculae are darker, pupilled more ferruginous-brown; the undulate line consists of small lighter yellowish spots proximally bordered with a darker colour, behind it in the somewhat darkened marginal area the veins are somewhat strewn with white. Hindwing yellowish-white, at the margin smoked. Peru (Pozuzo).
- glaucopis.* **E. glaucopis** *Hmps.* has bright red-brown forewings with brown transverse lines being bordered with grey on the averted sides; the maculae are pupilled olive-brown and encircled with grey, between them a faded dark median shade; undulate line double, blackish, filled up with a greyish white. The red-brown hindwing is dusted with grey, with brownish-red fringes. Expanse of wings: 28 mm. South East Peru.
- rubor.* **E. rubor** *Gn.* (21 i). Forewing of a bright brownish red with a purple tint, with very indistinct transverse lines and dots on the veins behind the posterior line; the upper maculae are encircled with dark, from the reniform macula an oblique undulate median line runs to the proximal margin; the light undulate line is proximally bordered with dark. Hindwing yellowish-white, on the veins and margin brownish. Brazil.
- leucopera.* **E. leucopera** *Schs.* (21 h) has light pinkish-reddish forewings dusted with ferruginous-brown, with brown, on the averted sides white transverse lines, and with black and white dots on the veins behind the distal line; the large maculae are darker brown, in whitish rings, the undulate line is whitish, proximally red-brown, the marginal area behind it red-brown, at the apex more grey. Hindwing diaphanous white, veins and costal margin ochreous-brown. Brazil.
- strigiopis.* **E. strigiopis** *Dogn.* Forewing ferruginous brown with black and white strewn veins and very light brownish transverse lines, the anterior line extending from the ring-macula straight to the proximal margin, the posterior line touching the reniform macula, both maculae being large rings encircled with a light colour and being sometimes contiguous; behind the distal transverse line black and white dots on the veins; undulate line almost straight. Hindwing light grey with reddish fringes. Expanse of wings: 26 to 28 mm. South East Peru (Carabaya).
- marginalis.* **E. marginalis** *Schs.* (21 h) is very easily recognizable by the contrastingly white subterminal band. Forewing red-brown, towards the base mixed with ochreous-yellow, with double transverse lines and yellowish-encircled maculae, the reniform macula 8-shaped; behind the distal transverse line there are black and ochreous-yellow dots on the veins and behind the cell a wedge-shaped black spot extending into the white band which is dusted with olive at the costal margin, proximal margin and in the centre; marginal area red-brown. Hindwing dark brown, towards the base lighter.
- keela.* **E. keela** *Sm.* is allied to *vecors* (21 h), but it has narrower wings and a more monotonous red-brown colour, with rather indistinct markings; both transverse lines double, the posterior line in the distal part more punctiform, between them a dark median shade; the maculae are small, the reniform macula is narrow, in the centre strangulated, strewn with yellowish and pupilled darker, with a black dot above; the undulate line is sealed yellowish, before it a coherent blackish nebulous stripe. Hindwings smoke-grey with a bronze reflection. Expanse of wings: 27 to 29 mm. Arizona, in August.
- gigas.* **E. gigas** *Sm.* is on its yellowish ground dusted with a bright brownish-red, with smoke-grey markings; both the transverse lines are double, interrupted, the posterior line in the distal part more punctiform, at the upper cell-end sharply bent, often with dark and yellowish dots on the veins behind it; median shade broad and dark; before the spotted yellow undulate line a coherent narrow shade extends; the maculae are rather indistinct, the reniform macula mostly dusted with grey. Hindwing smoke-grey. Expanse of wings: 35 to 40 mm. South Arizona.
- gigantoides.* **E. gigantoides** *B. & McD.* (21 i) is allied to *gigas*, with narrower wings, of a darker and more uniform colouring, without any maculae. Somewhat lustrous purple brown, in the basal area dusted with blackish, with double, dentate transverse lines with somewhat lighter fillings, between them a very prominent black median shade; undulate line extinct or absent. Hindwing smoke-grey. Expanse of wings: 32 mm. Arizona (White Mts.).
- dubia.* **E. dubia** *B. & McD.* is a very small, delicate species looking almost like a *Cerma*. Forewing lustrous dark grey with quite indistinct markings; the transverse lines are single, the anterior line towards the base

bordered with a somewhat lighter colour; the ring-macula is a light, the reniform macula a darker small spot, the latter dying away in the median shade; the undulate line is absent. Hindwing smoke-grey. Expanse of wings: 20 to 25 mm. From Arizona.

E. discreta *B. & McD.* (21 k) is of a more slender structure and lighter than the similar *mania* and *dubia*, *discreta*, without the white dots at the reniform macula and behind the postmedian line, and with much less dark prominent shading before the undulate line; the last palpal joint is shorter than in *dubia*, the antennae are much thinner and more finely ciliated; the eyes are also more scantily haired. From California, in July and September.

E. puerilis *Gr.* (21 i). Forewing ochreous-yellowish, dusted with purple-red, and striped dark on the *puerilis*. veins, with grey strewing, undulate transverse lines and black dots on the veins behind the distal line; the ring-macula is absent or it is a minute white spot with a black streak to the reniform macula which is indistinct and more or less 8-shaped, with a light or white filling in the upper half, before it a broken median line; undulate line yellowish-white, proximally bordered with brown and before it with more or less distinct black sagittae. Hindwing brownish-grey with yellowish fringes. United States (Washington to California).

E. contrahens *Wkr.* (= *theraba* *Morr.*) (21 k) has ochreous-yellowish forewings with brownish-grey *contrahens*. strewing except the basal part of the proximal margin and an oblique apical patch; the anterior transverse line is double, filled up with ochreous-yellowish, the posterior line single, distally bordered with yellowish; maculae small, in indistinctly lighter rings and pupilled darker; the undulate line is entirely absent. Hindwing yellowish-brown, at the margin darker. Canada to New Mexico.

E. rhimla *Dyar* (21 k). Forewing yellowish grey or yellowish-brown, shaded much darker particularly *rhimla*. in the discal and marginal areas; anterior transverse line dentate, the posterior line almost straight, only on the middle radial branch pointedly projecting; maculae pupilled darker, the reniform macula distally white behind it a light spot. Hindwing blackish with light fringes. Mexico (City) in September.

E. conar *Streck.* (= *quadrastigma* *Sm.*) (21 k). Forewing light reddish, dusted with purple brown, *conar*. with single, dark, on the averted sides whitish transverse stripes and black streaks on the veins behind the distal stripe; the maculae are pupilled black and encircled with whitish, between them an oblique median shade; the undulate line is only marked by the darker marginal area. Hindwing yellowish-white, on the veins and margin brownish. United States (Nebraska, Utah, New Mexico, Arizona).

E. cacoeona *Dyar* (21 k) has dark grey forewings with a black forked basal ray; the proximal double *cacoeona*. transverse line has a lighter filling, the distal line black, distally bordered with light; instead of the reniform macula a black streak; the light maculae are in black rings, the reniform macula is quadrangular with a small black spot in the lower cell-angle, between both a black median line; the black undulate line is sharply dentate. Hindwing brownish-grey, towards the base lighter. Expanse of wings: 24 to 27 mm. Mexico (City).

E. infidelis *Dyar* is likewise allied to *contrahens* (21 k), but it has more monotonously brownish-grey *infidelis*. forewings, without the light apical patch and proximal margin in the basal area; both the transverse lines are indistinctly double, with hardly lighter fillings; the small maculae are in somewhat lighter rings and with feebly darker pupils; the undulate line is marked by some small dark sagittae, especially discally. Hindwing brownish-grey with lighter fringes. From New York.

E. rectiflava *Sm.* has a dusty yellowish ground-colour with rather indistinct markings except the distinct *rectiflava*. subterminal line and a blackish median shade; the transverse lines are double, the posterior line more punctiform, behind it the veins are interrupted blackish, so that another double row of dots appears; before the undulate line extends a uniform narrow brown shade, the marginal area is darker than the other ground of the wing; the maculae are encircled with a somewhat darker colour. Hindwing brownish-grey. Expanse of wings: 27 mm. Arizona.

E. flosca *Sm.* Forewing dull smoke-grey with extinct markings, difficult to distinguish by the very *flosca*. intensely strewn ground-colour; particularly the posterior transverse line is almost entirely absent; the most distinct of all is the yellowish undulate line being sealed darker proximad; maculae in somewhat lighter rings, the slightly strangulated reniform macula with some whitish scales in the lower distal angle. Hindwing smoke-grey. Expanse of wings: 25 to 30 mm. Arizona. It recalls somewhat *E. contrahens* (21 k) in its exterior.

E. perbrunnea *Grt.* (21 k). Forewing purple red-brown, costal margin and marginal area more greyish- *perbrunnea*. brown, the veins strewn with white, with indistinct, on the averted sides whitish transverse lines, the distal line followed by black, white-dotted streaks on the veins; ring-macula indistinct, reniform macula narrow, black, encircled with white; the whitish undulate line is proximally bordered with brown, with dark streaks on the veins behind it. Hindwing brownish-grey. Canada to California.

E. hyposcota *Hmps.* (21 k) has greyish-brown forewings tinted reddish, with light grey transverse *hyposcota*. lines, with grey and black streaks on the veins behind the distal line and small grey-ringed maculae, the reniform macula more or less 8-shaped; the grey undulate line is proximally bordered with brownish-grey. Hindwing brown. Mexico to Brazil.

E. erythropis *Hmps.* is strewn darker on the deep red-brown forewing, with darker striped veins and *erythropis*. the folds suffused with red. Transverse lines double, black, the posterior line dentate, with dots on the veins;

the maculae are deep red, the reniform macula below pupilled black with a white dot; the undulate line consists of small red internerval spots, the largest at the anal angle. Hindwing white, on the veins and margin brownish. Expanse of wings: 34 mm. South East Peru.

- rubirena*. **E. rubirena** *Hmps.* Forewing lustrous dark brown, dusted with grey and strewn with black, the proximal margin of the basal area red-brown; the anterior transverse line is indistinctly double undulate, the posterior line indistinct, dentate, blackish; the ring-macula is absent, the reniform macula is encircled with black, in the upper half filled up with red, in the lower angle with a white dot; above the anal angle there is a small reddish spot. Hindwing reddish-brown, towards the margin darker. Expanse of wings: 36 mm. Described from Peru.
- uniformis*. **E. uniformis** *Sm.* (211) is on the forewing grey, dusted with purple red and strewn with greyish-brown, the veins dotted white; transverse lines indistinctly double, the posterior line single, dentate; the maculae are small and not very distinct, the reniform macula below pupilled dark and with white dots around it; the indistinct undulate line is grey, proximally bordered with blackish-brown. Hindwing brownish-grey. Arizona.
- furfurata*. **E. furfurata** *Grt.* (= *peredia* *Grt.*) (211). Forewing yellowish-white, dusted with a light purple reddish, with indistinct transverse lines and a row of dots on the veins behind the distal line, and large, light maculae encircled with a darker colour, the reniform macula below pupilled dark and distally dotted white; between them a broken median shade; the light undulate line is proximally bordered with dark brown. Hindwing ochreous brownish. United States.
- communis*. **E. communis** *Dyar* (= *affurata* *Hmps.*) (211). The grey forewing is in some places dusted with reddish-brown, with single transverse lines, the posterior line dentate and with dots on the veins; the small maculae are pupilled brown and encircled with light, the reniform macula below pupilled black and distally often with 2 white dots. Undulate line light, proximally bordered with brown. Hindwing whitish, dusted with brown, in the ♀ darker. Canada to California and Arizona.
- oroba*. **E. oroba** *Drc.* (211) almost resembles an *Euxoa*; forewing grey, more or less dusted with reddish-brown, with dentate, more or less punctiform transverse lines and a small reniform macula marked by reddish or yellowish; instead of the coniform macula often a small red-brown spot; the lighter undulate line is marked by dark proximal dusting and by the darker greyish-brown marginal area. Hindwing white with yellowish fringes, in the ♀ tinted brownish-grey. — **blanduja** *Dogn.* is a more red-brown form from Ecuador. — The typical form flies in Mexico.
- thermosema*. **E. thermosema** *Dogn.* Forewing dark reddish-brown, strewn with lilac except the markings: double transverse lines, the posterior line finely dentate, the obliquely oval ring-macula and the large reniform macula being like in *oroba* encircled with a darker colour, and the undulate line being expanded at the costal margin; hindwing whitish with a slight yellowish tint. Expanse of wings: 34 to 35 mm. Described from Colombia (Quindiu Pass).
- thermistis*. **E. thermistis** *Drc.* (211). Forewing light reddish-brown, in the marginal area deep brownish-red, with single dentate or punctiform transverse lines; the maculae are very small and indistinct, the reniform macula pupilled darker; a light undulate line is scarcely traceable. Hindwing yellowish-white. Colombia.
- magnirena*. **E. magnirena** *Dogn.* has light violet forewings with brown markings; double transverse lines proceeding from large costal-marginal spots, between them a very large spot filling up the whole cell-end and containing the reniform macula which is only partly defined; the posterior transverse line is dentate with a double row of dots behind it, and a faded spotted subterminal line; fringes pinkish-violet. Hindwing white, at the margin grey. Expanse of wings: 30 to 35 mm. Colombia (Quindiu Pass, Monte Socorro).
- subtegula*. **E. subtegula** *Dogn.* Forewing Indian red with black veins strewn with white; ring-macula marked by some white and black scales, above it an oblique, white costal-marginal streak, reniform macula large, in a white ring and pupilled white, behind it a bent row of white dots on the veins; the undulate line consists of small white internerval spots. Hindwing blackish with a brass lustre. Expanse of wings: 29 mm. From Colombia (Quindiu), at an altitude of 3000 m. Taken by FASSL.
- prasinospila*. **E. prasinospila** *Hmps.* (20 a). Forewing reddish-brown with black transverse lines bordered by small yellowish-green spots; maculae yellowish-green, in the centre more or less pupilled brown, the reniform macula on the median produced towards the base; the undulate line consists also of small yellowish-green spots, the largest being at the costal margin. Hindwing brownish-grey, towards the base lighter. Colombia.
- magniorbis*. **E. magniorbis** *Dogn.* (211) has red-brown forewings with a violet tint and dark brown veins; the anterior transverse line zigzag-shaped, ochreous yellow, the posterior line ochreous yellow and white, with a row of white dots behind it; the large reniform macula is white, above and below with one black dot each, the round ring-macula is hardly traceable; the undulate subterminal line is ochreous-yellow. Hindwing blackish with a brass lustre, with a lilac margin and fringes. Expanse of wings: 29 to 31 mm. Colombia (Cali, San Antonio), at an altitude of 2000 m.
- albulirena*. **E. albulirena** *Dogn.* Forewing brick-coloured reddish with brown veins and with transverse lines marked by white dots on the veins; the flattened, roundish ring-macula is marked black and white, the large,

oblong, proximally concave reniform macula has a white ring and is encircled with black, with a straight white proximal streak; the indistinct undulate line is ochreous-yellowish with small black internerval spots before it; fringes brown speckled with white. Hindwing ochreous-brown. Expanse of wings: 29 mm. Quindiu (Colombia), at an altitude of 3800 m.

E. spodiaca Dogn. Forewing red-brown mixed with chestnut-red, with blackened, white-strewn veins *spodiaca*, and dentate double transverse lines, the anterior line filled up with a lighter colour, between them a bent median shade; the very small oval reniform macula is more or less ochreous-yellow, or only in such a ring with a brown discal streak in the centre, and with or without white dots above and below; the light subterminal line is bordered with a darker colour. Hindwing blackish with a brass lustre, towards the base lighter. Expanse of wings: 30 to 32 mm. Colombia (Mt. Socorro, Quindiu Pass).

E. lubrica Dogn. has brown forewings with double, dentate black transverse lines; the ring-macula *lubrica*, is round, below dotted white and with a black median dot, the large, oblong reniform macula has below 2 white dots with a blackish discal median streak; instead of the undulate line there are small black lunae with a lighter line behind them. Hindwing yellowish-grey. Expanse of wings: 28 mm. Colombia (Quindiu Pass).

E. taciturna Dogn. is on the forewing violettish-brown with single black transverse lines bordered *taciturna*, with a lighter colour; the small brown ring-macula is encircled with black, so is the large oblong reniform macula which is pupilled brown and black; a subterminal row of small internerval spots, one spot being absent discally. Hindwing yellowish-white. Expanse of wings: 30 to 32 mm. Colombia (Quindiu Pass).

E. umbracula Dogn. Forewing violettish-grey with double, brown transverse lines with a lighter *umbracula*, filling. Ring-macula oblong-oblique, filled up with brown and encircled with black; behind it follows a broad brown median shade occupying the cell and the whole space as far as the postmedian line and extending at the proximal margin to the antemedian line; in it is situate the large, equally coloured reniform macula being encircled with grey, distally in the centre convexly angled, and with a grey median streak; behind the double undulate line with a lighter filling the marginal area is lilac-grey with small black marginal dots. Hindwing white, on the veins and margin grey with a central dot and postmedian line. Expanse of wings: 35 mm. Colombia (Quindiu Pass), taken by FASSL at an altitude of 3800 m.

E. lactipex Dogn. Forewing lilac-brown with blackish-brown double transverse lines, behind the distal *lactipex*, line with dots on the veins; the maculae are surrounded with yellowish, or ochreous yellow surrounded with brown; before the reniform macula there begins a large, flatly triangular costal-marginal spot extending to the apex, of a light ochreous colour; between the maculae and postdiscally the ground is darkened; undulate line double, filled up with yellowish. Hindwing blackish with yellow speckled fringes. Expanse of wings: 33 mm. Colombia (Quindiu Pass).

E. perfusata Dogn. has chestnut-brown forewings strewn with white, with double transverse lines *perfusata*, being prominent by the absence of the strewing; the ring-macula is oblique, the reniform macula oblong, between them a straight median line from the costal margin to the proximal margin; the undulate line is broad, sinuate. Hindwing yellowish-grey with ochreous-yellow fringes. Expanse of wings: 36 mm. Colombia (Mt. Socorro) from an altitude of 3400 m, taken by FASSL in July.

E. leucocraspis Dogn. Forewing ochreous-brown, strewn with whitish, indistinctly marked with *leucocraspis*, brownish transverse lines strewn with white on the averted sides, the posterior line distally ochreous-yellowish, between them a bent median shade; the ring-macula is extinct, the reniform macula in the upper half ochreous-yellowish, below quite extinct and strewn with whitish; the undulate line is absent. Hindwing dirty white, towards the costal margin dusted with blackish. Expanse of wings: 30 to 31 mm. Described from Costa Rica (Volcano of Irazu).

E. flavirufa Hmps. is on the bright brownish-red forewing mixed with yellowish and somewhat *flavirufa*, strewn with black, the proximal half of the discal area being darker; transverse lines double, blackish, the distal line with dots on the veins; the maculae are yellowish, dusted with red and encircled with blackish, the reniform macula in a whitish ring, with a black spot in the lower half, between both a black median line; the yellowish undulate line exhibits proximally small black sagittae, 2 larger ones at the discal fold. Hindwing yellowish-white, particularly at the margin brownish. Expanse of wings: 42 mm. South East Peru.

E. poliotis Hmps. (25 c). Forewing greyish-brown, strewn with whitish and dark brown, with indis- *poliotis*, tinct dentate transverse lines, rather large, but indistinct maculae, surrounded with some small white dots; the undulate line is formed by a row of small blackish-brown and white sagittae. Hindwing light brown with darker veins and margin. Ecuador.

E. unicolora Mssn. (25 b). Reddish-brown with purple grey dusting; only the posterior transverse *unicolora*, line is indicated, also the maculae are hardly visible; undulate line indistinctly darker. Hindwing white with brownish veins, costal margin and distal margin. Ecuador.

E. melanosigma Hmps. has blackish-brown forewings with a coppery reflection and strewn with a *melanosigma*, greyish white, with black transverse lines being bordered with white on the averted sides, and with large blackish-

brown maculae encircled with black; the undulate line is white at the costal margin and anal angle, between them indistinct, proximally before it a row of small black sagittae. Hindwing whitish-brown with darker veins and margin. Expanse of wings: 34 mm. South East Peru.

viuda. **E. viuda** Dogn. (25 c). Forewing dark red-brown, strewn with blackish, the antemedian area, a median shade and the marginal area dusted with blackish; the anterior transverse lines are proximally bordered with a brownish red, the posterior line being double, filled up with brownish-red, the small maculae ferruginous-red; instead of the undulate line there is a row of small yellowish and black lunae. Hindwing dark brown with grey fringes. Ecuador.

monochroa. **E. monochroa** Hmps. has lustrous reddish-brown forewings dusted with grey, with brown, quite indistinct transverse lines; the grey reniform macula is encircled with brown, the whitish undulate line is proximally bordered with brown. Hindwing reddish greyish-brown with lighter fringes. Expanse of wings: 26 mm. Peru (Acopampa).

fractura. **E. fractura** Sm. The ground-colour is a light reddish yellow, the interrupted double transverse lines are distinct, the posterior line punctiform, parallel to the margin; before the light undulate line a somewhat irregular darker shade; the upper maculae are coloured like the ground, encircled by single black scales. Hindwing of a dull yellowish grey. Expanse of wings: 27 to 28 mm. From Arizona. It has broader wings than the similar *furfurata* (21 l).

smithi. **E. smithi** Dyar resembles *fractura*, but it is more brownish-grey in the ground-colour scantily strewn with black; the transverse lines are double, the posterior line with dots on the veins in the distal part; the maculae are finely encircled with black, and the reniform macula below filled up with a somewhat darker colour; the undulate line is light, on the inside bordered with a somewhat darker colour. Hindwing yellowish-grey, at the margin smoky. United States: from New York.

mecrona. **E. mecrona** Sm. looks like *communis* Dyar, but it differs by the dull grey ground-colour with a somewhat yellowish tint, without any reddish or brown admixtures and monotonously smoky-grey hindwings without a yellowish reflection; it is besides larger: expanse of wings: 25 to 29 mm. From British Columbia (Kaslo), flying early in July.

tertulia. **E. tertulia** Dogn. (25 d). Forewing blackish-brown, suffused with deep red-brown, with a small, purely white reniform macula, without any transverse lines or other marking, only at the costal margin towards the apex 5 minute yellowish-white streak-dots. Hindwing dark brown. Ecuador.

adonea. **E. adonea** Drc. (21 l) has brown forewings suffused with purple and strewn with whitish, with single transverse lines, the anterior line towards the base bordered with a lighter colour, the posterior line dentate; the maculae are very small, round, encircled with black, the reniform macula pupilled white or yellowish; instead of the undulate line a row of small, black spots distally pupilled white. Hindwing greyish-brown with light fringes. Costa Rica.

flammans. **E. flammans** Dogn. Forewing dark fiery red, scantily strewn with yellow, the costal margin, veins and fringes red-brown, the small ring-macula and the reniform macula are encircled with yellow, in the lower cell-angle a white dot; the anterior transverse lines are incomplete, yellow, the posterior line consists of small black lunae, instead of the undulate line there are black internerval dots, those behind the cell are removed proximad. Hindwing brown with a yellowish reflection and lighter fringes. Expanse of wings: 35 to 38 mm. South East Peru (Carabaya).

renalba. **E. renalba** Schs. Forewing brown with a silk lustre, with blackish-brownish veins and indistinct transverse lines, the anterior line being double at the costal margin and proximal margin, filled up with whitish at the costal margin, the posterior line with dots on the veins behind it, between them a broad darker median shade; instead of the ring-macula a white dot encircled with black, the large reniform macula is white, strewn with some brown scales; a subterminal row of deep velvety brown spots, distally sealed whitish. Hindwing brown, at the proximal margin darker, with pinkish-whitish fringes. Expanse of wings: 33 mm. Costa Rica.

moneti. **E. moneti** Schs. has dark red forewings with black veins and transverse lines, in the basal area below the cell dusted somewhat ochreous; the anterior transverse line is partly double, the posterior line indistinctly the same; the round ring-macula is encircled with ochreous-yellowish, the oblique reniform macula is distally concave, strewn with yellowish and distally bordered with white; the undulate line is interrupted spotted ochreous-yellowish, the fringes are black and brown. Hindwing blackish-brown with yellowish pink fringes. Expanse of wings: 30 mm. From Costa Rica (Juan Vinas).

torrida. **E. torrida** Dogn. Forewing chocolate-brown, the maculae and veins blackish-brown, strewn with white and traversed by 4 fine white transverse lines, the subbasal and antemedian lines almost straight, the postmedian line and the reniform macula curved and sinuate, the subterminal line undulate. Hindwing blackish with a brass lustre. Expanse of wings: 29 mm. South East Peru (Carabaya).

stenia. **E. stenidia** Dogn. has red-brown forewings, in the basal, proximal and marginal areas darkened, instead of the reniform macula only with a small yellowish spot, all the other markings quite extinct, behind the cell with a row of light dots on the veins, and instead of the undulate line with light internerval dots, accompanied

by one darker nebulous line each before and behind it parallel to the margin. Hindwing white, costal margin and distal margin broadly grey, the fringes tinted pinkish-reddish. Expanse of wings: 25 mm. Peru (Angamarca).

E. duplicilinea Dogn. Forewing quite light ochreous-yellowish with a slight grey tint, with brown *duplicilinea* markings; ring-macula and reniform macula replaced by dots, the latter with some white scales at the lower cell-end and above it a small yellowish spot, between both with a very much flawed, very light median shade; the transverse lines are marked by few dots on the veins; the undulate line is double and extends straight from the apex almost to the proximal angle; on the margin there are black dots on the veins. Hindwing whitish, towards the margin grey, with a blackish discal dot. Expanse of wings: 29 to 31 mm. South East Peru.

E. dormitosa Dyar on the whole resembles *pantostigma* (21 f), but the reniform macula is more oblique *dormitosa* and more bent, the median area of the forewing is more intensely marked black. Forewing dark reddish-brown, both the maculae are roundish, filled up with black, the transverse lines double, filled up with a lighter colour, the distal part of the posterior line consists of dots on the veins; the dark median shade expands towards the proximal margin; the marginal area is intensely dusted with black. Hindwing blackish-brown, towards the base lighter. Expanse of wings: 22 mm. Mexico (City) in July.

E. perfragilis Dyar (22 a) has quite light ash-grey forewings with whitish transverse lines and large *perfragilis* maculae encircled with whitish, the undulate line the most distinct. Hindwing whitish, at the margin and on the veins darker. The ♂ antennae are serrate and provided with ciliary tufts. The ♀ which I take to belong hereto is somewhat darker, more reddish blackish-brown, with more distinct double transverse lines, the distal part of the posterior line punctiform; before the light undulate line there are small, quite indistinctly darker diffuse spots. The hindwing is somewhat darker. From Zacualpan and Mexico (City).

E. dyari nom. nov. (= agrotiformis Dyar nee Grt.) has lilac-brownish forewings with a black basal *dyari* dot and black-filled cell between the large maculae, the ring-macula is of the ground-colour, oblique, the reniform macula lighter, yellowish, only distally encircled with black; the proximal transverse line is double, blackish, the distal line only traceable, the light undulate line is very feeble, subapically with 2 small black spots. Hindwing dirty whitish, at the margin broadly darkened. Expanse of wings: 30 mm. Mexico (Zacualpan).

E. dromas Schs. is dusted with lilac on the ochreous-yellowish forewing, scantily strewn with dark *dromas* with feeble transverse lines, the anterior line double, the posterior line punctiform, between the hardly darker maculae with somewhat lighter rings with a dark median shade interrupted by the reniform macula; the light undulate line is straight. Hindwing greyish-white, at the margin darker. Expanse of wings: 30 mm. Costa Rica.

E. phaeostigma Drc. (22 a). Forewing reddish-brown, both the maculae blackish, surrounded by *phaeostigma* black dots, the distal margin blackish, with a narrow light undulate line. Hindwing dark blackish-brown. The ♀ is much darker with a lighter reniform macula. Peru.

E. metaleuca Drc. has light brown forewings densely dusted with grey, with both the light grey *metaleuca* maculae and with a reddish undulate line from the apex to the proximal margin near the anal angle. Hindwing of a pure white. Size of the preceding. Peru.

E. griseorufa Drc. Forewing grey, along the distal margin shaded with reddish-brown, with 2 fine *griseorufa* reddish-brown zigzag transverse lines and with a faint brown dot in the cell; undulate line yellowish, fringes grey. Hindwing light grey, at the distal margin and apex darker. Size of *phaeostigma*. Peru.

E. cirphidia sp. n. (22 a). Forewing light reddish-yellow, only in the disc and on the undulate line *cirphidia* more purely prominent, otherwise densely dusted with red-brown, the fine transverse lines red-brown, the posterior line dentate; all the 3 maculae large and rounded, encircled with red-brown, the ring-macula with a black pupil, the reniform macula below filled up with black; the apex is divided by a black streak. Hindwing greyish-brown, at the margin darker. 2 ♂♂ from Orosi (Costa Rica), discovered by FASSL.

E. cupreola sp. n. (22 a). Forewing deep copper-brown, with quite indistinct darker transverse lines *cupreola* and borderings of the maculae, only the reniform macula being a little lighter prominent; the only distinct marking is the undulate line which consists of small lighter yellowish spots in a straight line, each of them being proximally bordered by a small deep velvety black spot; it reaches neither to the costal margin nor to the proximal margin. Hindwing whitish, dusted with a brownish grey, particularly towards the margin. According to a ♀ from the Quindiu Pass (Colombia).

E. albitorna sp. n. (22 a, b). Reddish-grey with a slight coppery reflection, strewn with blackish, *albitorna* with quite indistinct, interrupted, double transverse lines, the posterior line being dentate; the maculae of the same colour, encircled with a somewhat darker colour, the reniform macula in the lower distal angle with a minute white dot, before it a faded blackish, angular median shade; the irregular undulate line consists of accumulations of whitish scales, with darker small spots before it, in the anal angle with a larger, yellowish-white spot. Hindwing brownish-grey. The ♀ is much larger, darker, the transverse lines on the averted sides bordered with a darker colour. 2 ♂♂, 1 ♀ from Pacho (Colombia).

iridescens. **E. iridescens** *sp. n.* (22 b). Forewing reddish-yellow, with a brass lustre, coarsely and densely strewn with a brownish black and extensively strewn with silvery bluish-violet, particularly pure in the filling of the black, double, dentate transverse lines and between and behind the 3 maculae which are thickly encircled with black; before the lilac-white undulate line with a larger spot at the anal angle there are black sagittae, the largest and at the same time that which projects the farthest towards the margin is on the discal fold. Hindwing brownish-grey, towards the margin darker. 1 couple from Mt. Tolima (Colombia). — **aeruscans** *form. nov.* (22 b) from Bolivia (Cuesta de Cillutincara), of which there is also 1 couple before me, is of a much more monotonous colouring, of a purer brass-colour with a slight olive tint, without the coarse black strewing, much more finely marked and instead of the bluish-lilac colour only somewhat dusted with lilac-grey. In both forms these bright colours appear only in an oblique light, from above they appear to be plainly greyish-brown.

tenebrosa. **E. tenebrosa** *sp. n.* (22 b) resembles *albitorna* (22 a, b), but it is much darker and without the white anal spot; the reniform macula is narrower, but below it exhibits distally the same white dot; in the distal third of the costal margin there are 4 small snow-white streak-shaped spots; the single dentate transverse lines are on the averted sides hardly noticeably lighter, bordered with a more yellowish colour, the undulate line is entirely absent. Hindwing dark blackish-brown. 1 couple from Colombia (Pacho and the Quindiu Pass).

29. Genus: **Ursogastra** Sm.

We mention this genus here only, because it is enumerated as a genus in the North American catalogues. In our opinion it coincides with the genus *Eriopyga*, and it is identical with the group of species *fuscibarbata* to *excavata* (p. 135), which is distinguished by thick hair on the middle femora and tibiae and long lateral hair-tufts on the abdominal sides, meeting each other, as they are bent downwards, on the centre of the ventrum. The cell of the forewing beneath exhibits fine hairing turned more longitudinally than downwards. The only species to which we add yet a doubtful form, would thus be best arranged at the said place as a subordinate genus.

lunata. **U. lunata** Sm. (22 c) has reddish-grey forewings with double interrupted transverse lines and between them the very characteristic, deep velvety brown coherent macular marking which is well recognizable from the figure; the anterior transverse line is very obliquely situate and ends in the centre of the proximal margin; the light undulate line is on both sides bordered with brown and runs almost straight parallel to the distal margin. Hindwing dull smoky grey. Found in Arizona. — The occurrence of this otherwise quite isolated species in the Colombian Central Cordilleras (Quindiu Pass), from where a very fine ♂ taken by FASSL is before us, seems to be most remarkable. As FASSL has otherwise most conscientiously and carefully labelled his specimens, it cannot be assumed to be an error, particularly since the insect differs in several marks, so that it might be a different species: **quindiensis** *form. nov.* (22 c) exhibiting more squat wings with a less sharp apex; the colour of the forewing is a very light whitish grey, in some places finely strewn with chestnut-brown, the most intensely in the concavity of the macular spot at the costal margin; the anterior transverse line runs very little obliquely, the distal part of the posterior line consists of black dots on the veins, whereas the proximal part is more or less red-brown and coherent; the marginal area is somewhat darker olive-grey in which the undulate line is prominent as small light internerval spots proximally bordered with red-brown, thus quite different compared to *lunata* where besides the marginal area is only darkened in the upper half in a broad triangular shape and a lighter costal-marginal triangle appears at the apex of the wing. Fringes deep red-brown.

30. Genus: **Eriopygodes** Hmps.

Distinguished from *Eriopyga* by the thorax being covered with predominantly pure hair, with distinct loose tufts on the prothorax and metathorax; besides the hairy cover of the second palpal joint is longer. America has only one representative of this otherwise eastern genus.

grammado-ra. **E. grammadora** Dyar entirely resembles a *Cirphis* (p. 163): forewing loam-coloured yellowish with blackish-striped veins and folds and more brownish-red tinted fringes, both on the head and collar. Hindwing black with light reddish fringes. Abdomen above black with an ochreous-yellow anal tuft and a brownish-red ventral side. Expanse of wings: 33 mm. Described from Mexico.

31. Genus: **Nephelodes** Gn.

It shows quite the same marks as *Eriopygodes*, but the abdomen is covered with tufts above on the rings. They are larger species with partly very strongly combed antennae, half a dozen being known now, all of which are very similar. HAMPSON connected with this American genus the East Asiatic genus *Monostola*.

N. mendica *B. & Lindsey* is the most closely allied to the following well-known species and separable *mendica*. from it by its pinkish-brown tinge and white hindwings, besides the forewing is more coarsely scaled; the forewing is strewn with black on the veins, the discal area being as usually darker brown; the anterior transverse line is lighter, oblique, the posterior line being finely dentate, a broad light stripe, before it a fine dark nebulous line; the maculae are generally somewhat lighter, in the centre scaled darker; instead of the undulate line there is a darker shade which is most distinct at the costal margin. Expanse of wings: 40 mm. Described from Utah.

N. pectinata *Sm.* (22 d) is light purple brownish, strewn with a darker colour, on the veins striped *pectinata*. darker, in the discal area chocolate-brown with undulate, somewhat faded transverse lines and lighter indistinct maculae; the undulate line consists of small brownish-red sagittae. Hindwing dark brownish-grey with a reddish or purple tint and yellowish-white fringes. The ♀ is of a deeper purple with a not darker discal area. Canada.

N. demaculata *B. & McD.* (22 c) is very similar to *pectinata*, but of an ochreous-brownish ground- *demaculata*. colour, occasionally with a reddish or violet tint and quite extinct marking, the posterior transverse line being the best visible, the space behind it the lightest with darker veins; the posterior half of the discal area is mostly the darkest; the maculae are almost entirely absent. Hindwing smoky-grey with light fringes. California.

N. tertialis *Sm.* (22 c) is on the forewing purple brown with grey strewn and darker veins, in *tertialis*. the discal area deep red-brown; the transverse lines are rather indistinct, the posterior line double, the rather large maculae tinted purple-reddish, faded, the reniform macula distally with a light line, proximally on the median produced towards the base; the undulate line is indistinctly lighter. Hindwing yellowish-white with red-brownish veins and marginal area. Canada; Colorado.

N. emmedonia *Cr.* (= *minians* *Gn.*, *expansa* *Wkr.*, *subnotata* *Wkr.*) (22 c) has light reddish-brown *emmedonia*. or pinkish-brown forewings with a dark red-brown discal area and thorax, otherwise marked like the other species from which it differs in the ♂ by shorter combed antennae; the undulate line is finely dentate and proximally bordered with a dark colour. The yellowish-brown hindwings have pink fringes. — In the form **violans** *violans*. *Gn.* (= *subdolens* *Wkr.*) the ground-colour is deeper purple and without the reddish tint. — From Canada and the Eastern United States (New York, Illinois, Virginia).

32. Genus: **Poliodestra** *Hmps.*

Separated from the neighbouring genera by the eyes being above covered with cilia and the collar being hood-like raised to a projecting keel; the thorax is covered with hair and scales, the vertex exhibits a hair-tuft, the prothorax and metathorax show loose tufts, the abdomen is likewise tufted and laterally provided with a hairy cover like the tibiae. 5 South American species are known.

P. flavidentula *Schs.* (22 d) has grey forewings strewn with red-brown, with a black basal and proximal- *flavidentula*. marginal ray and double dentate transverse lines the latter in the submedian space with a V-shaped black marking on the inside; the upper maculae are large, grey, pupilled reddish and encircled with black, like the large triangular coniform macula; the undulate line consists of small yellowish-white lunae with black sagittae proximally and black marginal streaks distally. Hindwing light brown, towards the base lighter with whitish fringes. Chile.

P. violascens *Mssn.* (23 e) is on the forewing purple grey, strewn with dark, the markings only *violascens*. traceable by interrupted velvety-black spots bordered with white, the maculae only by some brown scales on the sides; the posterior transverse line is undulate. Hindwing brownish-grey, in the disc whitish. Anal tuft claret-coloured. Ecuador.

P. faeculenta *sp. n.* (22 d) is very similar to *violascens*, but the ground-colour is reddish yeast-coloured; *jaeculenta*. there are no traces at all of the anterior transverse line at the costal margin nor of the posterior transverse line; in the cell there are two irregularly quadrangular velvety-black spots, behind it another triangular one, all of which are finely margined with silvery white; in the submedian space there is a large black semicircle, the convexity turned towards the proximal margin, with a yellowish silvery white hook-shaped streak in it as the trace of the distal bordering of a coniform macula, above the distal end of the black spot between both median branches another small black punctiform spot; the white undulate line runs straight, it is subapically and centrally interrupted and on both sides bordered by black spots, apically and proximally by 2 larger sagittae. Hindwing light brownish-grey. The collar is unfortunately destroyed, so that it is not quite certain, whether it belongs to this genus. 1 ♂ from the Quindiu Pass (Colombia), taken by FASSL.

P. viola *Dre.* (22 d) has purple grey forewings strewn with brown, with rather indistinct, oblique, *viola*. single transverse lines, the posterior line being dentate, a small coniform macula and large confluent upper maculae, the ring-macula being oblong-elliptical, the reniform macula below extended towards the base; the

undulate line consists of very small black sagittae almost extending into the apex. Hindwing white with brown veins and margin. From North Peru.

glaucippe.

P. glaucippe Dogn. (22 d) is on the ash-grey forewing intensely strewn with white, by the accumulation of the white scales 3 large white costal-marginal spots, 2 antemedian spots and one behind the cell-end are produced; at the base there is a harpoon-shaped blackish-brown longitudinal ray; the ring-macula is very large, pupilled whitish and obliquely situate, its black border is in the ♂ confluent with the reniform macula. in the ♀ not, the blackish-brown filling of the cell between them extends as a triangular spot to the costal margin; the posterior transverse line is dentate whitish; subapically at the costal margin another blackish-brown triangular spot, below it the oblique whitish, proximally brown-shaded undulate line extending from the apex to the third quarter of the proximal margin. Hindwing white, veins and discal dot greyish-brown with speckled fringes. Peru, Colombia (Mt. Tolima), Bolivia (Cuesta de Cillutincara).

33. Genus: **Trichopolia** Grt.

We leave this genus containing but one species at this place, because it is usually looked for here; according to recent ascertainments, however, it is not in the least allied to the neighbouring genera, but it would be better placed between *Admetovis* and *Lophoceramica* and it is more closely allied to *Scotogramma* and *Hydroeciodes*. Proboscis developed, palpi obliquely erect, scaled; frons rough, scarcely raised, with a horny plate below it; the eyes are only at their posterior part ciliated, the male antennae strongly combed, in the last third serrate, in the ♀ ciliated; the thorax is clad with broad scales, the prothorax and metathorax exhibit loose tufts. The abdomen exhibits a larger tuft only on the first ring, a very small one on the second ring.

dentatella.

T. dentatella Grt. (= *obtusa* Sm., *licentiosa* Sm.) (22 a) is brownish olive-grey with very indistinct markings, all the 3 maculae being present and finely encircled with black, of the undulate transverse lines there are only traces; in the marginal area black internerval sagittae. Hindwing white with black marginal dots. From Utah to Arizona and California.

34. Genus: **Engelhardtia** B. & Benj.

Proboscis stunted, the short palpi long-haired; the frons is like in *Trichopolia* rough with a horny plate below it; the eyes are not large, very slightly strangulated, very hairy and with extraordinarily strong cilia; ♂ antennae with long pinnæ standing rectangularly to the shaft; the body is clad with long hair without tufts; abdomen laterally covered with long hair. Only 1 species:

ursina.

E. ursina Sm. (22 c) has whitish-grey forewings dusted with brown, the costal-marginal and distal-marginal areas remaining lighter; in the cell and above the submedian fold black longitudinal stripes; from the apex obliquely to the centre of the proximal margin a row of black sagittae being above short and growing longer below. Hindwing greyish-brown. From Colorado.

35. Genus: **Stretchia** Edw.

Separated from the preceding genus by its smooth frons with a hair-tuft and the keeled, somewhat hood-shaped collar, as well as by tufts on the prothorax and metathorax. The genus is American, but the Japanese *Xylomania saxeæ* (Vol. III, p. 88) was united with it.

muricina.

St. muricina Grt. (22 a) has red-brown forewings dusted with purple grey except the discal area, the costal-margin strewn with white, with single dentate transverse lines; the upper maculae have flown together forming a V or U shaped marking, and they are strewn and encircled with whitish, before, between and below them black or deep brown dusting, behind the reniform macula a ferruginous brown spot; before the indistinct light undulate line at the costal margin a small dark stripe, towards the margin dark stripes on the veins. Hindwing reddish-brown. Canada.

inferior.

St. inferior Sm. Dark grey, base of collar reddish, the forewing very indistinctly striated brown with extinct transverse lines; the large, confluent upper maculae are somewhat lighter than the ground and not defined with dark. Hindwing monotonously greyish-brown. Expanse of wings: 30 mm. California.

plusiaeformis.

St. plusiaeformis Edw. (23 b) is on the forewing bluish-white, strewn with dark brown, with a short black basal ray and single, undulate, not dentate transverse lines; the maculae being broadly confluent like a U are distally and below encircled with a dark brown, around it reddish-brown dusting, behind the reniform macula more ferruginous-red; the indistinct light undulate line is proximally bordered with blackish-brown, more distinctly so towards the costal margin. Hindwing greyish-brown with yellowish-white fringes. United

coloradicola.

States (Nevada). — **coloradicola** Strd. (= ab. 1 *Hmps.*) has broader and much darker forewings, not confluent maculae without the reddish tint in the surroundings, here only somewhat darker, the posterior transverse line is situate nearer at the reniform macula and straighter in its course. — The larva is on its whitish ground

densely watered with red-brown, with narrow whitish dorsal and lateral stripes and a broad white stigmatal band dusted with red. It lives on *Ribes*.

St. variabilis *Sm.* (22 e) is on a bluish-grey ground densely strewn with greyish-brown, in the discal *variabilis*. area except the costal and proximal margins dusted with brownish-grey, and with black-striped veins; the single transverse lines are on the averted sides bordered with grey; the grey, darker strewn maculae approach each other with their lower ends; the grey undulate line is proximally bordered with black. The whitish hindwing is tinted reddish and strewn with brown. Colorado.

36. Genus: **Morrisonia** *Grt.*

Very closely allied to the preceding genus from which it chiefly differs by the collar being only feebly keeled and a parted tuft on the thorax. American, but some species from New Zealand were included therein, which we have enumerated among the *Maoria* in Vol. XI, p. 77 seq.

M. mucens *Hbn.* (= *multifaria* *Wkr.*, *spoliata* *Wkr.*) (22 e) has whitish forewings more or less dusted *mucens*. with red-brown, with a black basal ray and dentate transverse lines being double at the costal margin, both connected by a prolongation of the coniform macula; the two upper maculae are surrounded with dark brown. Hindwing light brown, at the margin darker. From the Central to the Southern United States.

M. sectilis *Gn.* (= *rileyana* *Sm.*) (22 e). Forewing ochreous-yellowish, dusted with reddish-brown, *sectilis*. with a dark red-brown and black longitudinal shade in the submedian space, a black basal ray and dentate, at the costal margin double transverse lines, the distal line being distally whitish towards the proximal margin; the maculae are pupilled reddish, the ring-macula is large, obliquely elliptical, above open; instead of the undulate line small dark triangular spots in the centre of the margin. Hindwing yellowish greyish-brown, at the margin somewhat darker. Missouri, Texas.

M. albidior *B. & McD.* (= *sectilana* *Strd.*) is very similar to *sectilis*, smaller and of a much purer *albidior*. white ground-colour, but slightly tinted reddish. From Arizona. Compare what has been said in *E. diplogramma* *Schs.* (p. 135).

M. bisulca *Grt.* (22 e) has grey forewings dusted with reddish and dark brown, with black-striped veins *bisulca*. and a long black basal ray; the transverse lines are quite indistinct, whitish, the posterior line is dentate; between the small white maculae encircled with black there is a black stripe connecting them; the marginal area behind the undulate line is darker with black internerval streaks. Hindwing brown, towards the base grey. Arizona.

M. evicta *Grt.* (22 f). Forewing red-brown, dusted with white, particularly near the base of the costal *evicta*. margin, the cell filled up with yellowish; a basal ray and the veins are black; the transverse lines are indistinct and interrupted, the posterior line with white dots on the veins, the yellowish maculae are in whitish rings and above and below encircled with black, the ring-macula is prolonged towards the base and with a black streak below it, below confluent with the reniform macula; marginal area darkened with black internerval streaks which grow shorter towards the costal margin. Hindwing light brown, at the margin darker. Canada, New York. — **vomerina** *Grt.* exhibits the more extensive white costal-marginal area in bright contrast with *vomerina*. the blackish proximal-marginal part. — **infidelis** *Grt.* (22 f) is more purple brown, at the costal margin grey, *infidelis*. the maculae not being confluent. Michigan.

M. confusa *Hbn.* (= *infructuosa* *Wkr.*) (22 f) has grey forewings dusted with red-brown and strewn *confusa*. with black, with black-striped veins and basal ray; the transverse stripes are very strongly dentate, the posterior stripe distally bordered with ochreous, the maculae in ochreous rings; the light undulate line shows a distinct W, behind it the marginal area is darker with black internerval streaks; fringes speckled ochreous-yellow. Hindwing light brown, margin and veins darker. Canada to California. — The claret-coloured larva with fine white longitudinal stripes lives on willows etc.

37. Genus: **Xylomyges** *Gn.*

Like *Morrisonia*, but with but one tuft on the 1st abdominal ring and loose tufts on the prothorax and metathorax. Only North American species.

X. behrensiana *Grt.* (22 f). Forewing brownish-grey, as far as the whitish undulate line dusted with *behrensiana*. brown and densely strewn and striated with blackish-brown, with a light costal margin, the transverse lines bordered with whitish, the posterior double line being filled up with whitish; the maculae are encircled with whitish and confluent, the veins of the marginal area strewn with white. Hindwing light reddish, at the margin strewn with dark. California.

X. erythrolita *Grt.* (22 f) is a smaller, uncommonly variable, in the typical form dark purple grey *erythrolita*. species strewn with brown; the indistinct transverse lines are only marked by dark costal-marginal spots, the posterior line by dots on the veins; the small dark maculae are encircled with ochreous-grey, the whitish interrupted undulate line is proximally spotted brown. Hindwing greyish-brown, at the margin darker. — **apicata** *apicata*. *Sm.* (= ab. 1 *Hmps.*, *erythrolitoides* *Strd.*) (22 f) is of a redder ground-colour and on the whole somewhat

- more robust; the undulate line is more coherent and connected with the apex by an oblique streak; the reniform macula is a large, dark, indistinctly defined spot. — **acutangula** Sm. (22 g) is of a light bluish-grey ground-colour with distinct double transverse lines, the median shade being present, too; the subterminal area is darkened in contrast with the light marginal area; the coherent distinct undulate line forms subapically a sharp tooth. All these forms varying to almost purple black tints, fly in California together with the type.
- hiemalis.* **X. hiemalis** Grt. (= *californica* Behr) (22 g) is similar, but more mixed with brown and with a distinct basal ray, with a well developed coniform macula and with more or less distinct orange strewing in the centre of the larger maculae, before the undulate line with small black sagittae. Hindwing whitish brownish-grey. Canada to California.
- simplex.* **X. simplex** Wkr. (= *pallidior* Sm.) (22 g) has the white ground-colour of the forewing densely strewn with greyish-brown, an intense black basal ray, the transverse lines only marked by costal-marginal streaks, the posterior line also by streaks on the veins, all the 3 maculae are present and encircled with black, the ring-macula obliquely wedge-shaped, above open, before it the cell is filled up with black, and it is separated from the large, somewhat orange-strewn reniform macula by an oblique black costal-marginal shade; instead of the undulate line there are black sagittae. Hindwing white with fine black marginal streaks. From Canada to Colorado and California. — The green or brown larva with fine white longitudinal stripes lives on various shrubs.
- crucialis.* **X. crucialis** Harv. (22 g) is very similar, the shape of the wings is somewhat broader, rounder, the apex less sharp, the ground-colour more a slightly bluish greyish-white, only in the macular filling with orange-brownish scales, some also behind the postmedian line; all the markings are thicker and deeper black, otherwise arranged almost the same. On the white hindwing a thick dark discal luna and small black postmedian striae on the veins. From California. — f. **peritalis** Sm. (22 g) is tinted more brownish, the maculae being inclined to flow together, with less distinct transverse lines. From Oregon and Colorado.
- cognata.* **X. cognata** Sm. (22 h) is a very variable species, on the forewing tinted and strewn more or less intensely brown, grey or ochreous-yellowish, with double transverse lines, the posterior line single and dentate, and with large, often confluent maculae; the whitish undulate line is on both sides spotted blackish, the marginal area behind it darkened, the fringes speckled black and white. The white hindwing is strewn with blackish. Canada *minorata.* (Vancouver); Oregon; Colorado. — **minorata** B. & McD. (22 h) from California is a smaller, monotonously olive-grey form with quite indistinct markings.
- februalis.* **X. februalis** B. & McD. (22 h) is similar to *cognata*, with much more contrasting colours and markings, the marginal area being almost quite black, intensely mixed with black and white, near the base of the wing and round the reniform macula tinted olive-ochreous. Hindwing white, strewn with smoky grey, with a thick dark discal spot and marginal line as well as a fine bent median line. California.
- curialis.* **X. curialis** Grt. (22 h) has bluish-grey forewings densely dusted and strewn with brownish-black, on the folds often tinted reddish and on the veins striped black; the transverse lines are quite indistinct, the posterior line consists of dots on the veins, the maculae are indistinctly encircled with black, the reniform macula below more or less blackish and distally reddish; before the grey undulate line black sagittae. Hindwing purely *indurata.* white. California. — **indurata** Sm. (22 i) from Colorado and Durango is a larger, paler form. — **nicalis** Sm. *nicalis.* (22 h) is likewise a large, light form tinted more bluish-grey and in the ♂ slightly reddish, with almost entirely extinct markings, only the anterior transverse line and the undulate line being traceable, and the reniform *tantiva.* macula composed of a reddish diffuse spot; described from Washington. — **tantiva** Sm. (22 i) is more dusted with a bluish grey, the costal margin and marginal area more densely dusted, the undulate line is a distinct light *argus.* line with a dark nebulous stripe before it, both sexes being marked rather the same. Arizona. — f. **argus** Sm. has narrower forewings dusted with ash-grey, all the markings indistinctly visible, both the anterior transverse lines double, the posterior line single. California.
- candida.* **X. candida** Sm. (22 k) is on the bluish-white forewings densely dusted and strewn with black, with undulately dentate black transverse lines, and the maculae with whitish rings, brownish-black pupils and encircled with black, distally at the reniform macula generally reddish dusting; before the grey undulate line there are small blackish sagittae. Hindwing of a pure white. From Canada and Oregon.
- dolosa.* **X. dolosa** Grt. (22 i) is similar to *candida*, but it has a more greyish-white ground-colour, except the proximal-marginal and distal-marginal areas densely strewn and dusted with black, and very conspicuous by the large white coniform macula being confluent with the ring-macula; in the marginal area the veins are striped black. The white hindwing is scantily strewn with black. United States (Maine, New Hampshire, White Mts., New York, Plattsburgh, Colorado).
- rubrica.* **X. rubrica** Harv. (= *perlubens* auct nec Grt.) (22 i) has brownish-grey forewings being discally dusted with brownish-red as far as the costal margin and the undulate line, above the lower median vein often dusted

with black, with a black basal ray and double, undulate transverse lines; the reddish maculae are in grey rings and surrounded with black; the marginal area is darkened behind the whitish undulate line except a grey apical spot. The white hindwing is strewn with brown in the proximal area and on the veins. Oregon and California. — **rubricoides** B. & Benj. from Colorado and Utah is larger, paler, with more or less fading transverse markings. — **mustelina** Sm. (22 i) is of a more uniform reddish-grey colouring without the black shade below the cell and with less distinct transverse lines, the undulate line being contrastingly yellow. Hindwing of a pure white. From Washington, California, Colorado. — The form **pulchella** Sm. (22 i) is much more variegated, in the scheme of markings very similar to the preceding and like them with the same light apical spot, white, strewn with black, and except the discal area dusted with black, with a black basal ray and double transverse stripes; the ring-macula is of a pure white, the reniform macula posteriorly as far as the postmedian suffused with red-brown. Hindwing white, in the proximal area, at the margin and on the veins somewhat strewn with blackish. Canada.

X. perlubens Grt. (= subapicalis Sm.) (22 k) is similar to the preceding, though larger, with longer wings, on its grey ground dusted with ferruginous brown without the black tints of *pulchella*, the veins striped black and white, the other markings being the same, though the ring-macula is invariably round, in the preceding oblong elliptical. Hindwing white. United States from Washington to California. — The light brown or greenish larva has narrow white, black-edged dorsal and subdorsal lines with broad, reddish, white-edged lateral stripes, above them black shading. On species of *Ribes*.

X. patalis Grt. (22 k) is a very pale species, on its bluish-white ground strewn with a greyish brown, with very fine black markings; the transverse lines indistinct and interrupted, the maculae more or less confluent, the reniform macula below extended towards the base; instead of the undulate line there are small, fine, blackish sagittae. On the white hindwing the margin and veins are reddish-brown, in the ♀ dusted quite dark. Canada to California. — **fletcheri** Grt. from Canada is more intensely marked and exhibits darkened hindwings.

X. alternans Wkr. (= tabulata Grt.) (22 k) exhibits on the dark grey forewing double anterior and single dentate posterior transverse lines, the large maculae surrounded with black, the ring-macula quadrangular, above and below open; undulate line whitish with small blackish spots on the folds. Hindwing reddish brownish-grey. United States.

38. Genus: **Perigrapha** Led.

This genus being also represented in the palearctic region differs little from the preceding genus; generally the hairing of the body is rougher and stronger and instead of the two loose tufts the thorax exhibits in the centre one longitudinally keeled or comb-like erected tuft. Also the chest and legs are long-haired, and the ♂ antennae are mostly long-combed. For further particulars see Vol. III, p. 39.

P. prima Sm. has in both sexes combed antennae; forewing deep bluish-grey, strewn with a brownish black, the basal half of the costal margin lighter with double, partly interrupted, rather indistinct transverse lines; the maculae are large, light grey, surrounded with dark, the elliptical ring-macula touches below the reddish tinted reniform macula; the undulate line is marked by black strewing. Hindwing brownish-grey. Expanse of wings: 30 mm. California.

P. normalis Grt. (23 d) as the following species only shows combed antennae in the ♂, whereas those of the ♀ are serrate; forewing grey, dusted with purple brown and strewn with black; the broadly confluent maculae are situate in deep black surroundings and finely encircled with whitish, above they are open; transverse lines extinct; the undulate line is only distinct at the costal margin, otherwise only traceable. Hindwing blackish-brown. California.

P. pulchella Harv. (22 k). Forewing grey, except the basal half of the costal margin and the marginal area densely dusted with red and purple brown; transverse lines extinct, only the posterior line more distinct, on the veins long dentate; the small maculae are blackish, in light rings; before the undulate line is a dark brown nebulous stripe. Hindwing light brown. California.

P. terminata Sm. (22 k) is dull yellowish-grey, strewn with blackish-brown, with interrupted, rather indistinct light transverse lines, behind the distal line with dark, distally light-pupilled dots on the veins; only the reniform macula is represented by a small, narrow, yellowish luna, behind which the subterminal area is darkened, and behind the irregularly dentate undulate line the marginal area is lighter. Hindwing blackish with whitish fringes. California.

P. pectinata Sm. (23 e) is a very monotonously brownish-grey species strewn with black; all the transverse markings and maculae are absent except a dark median line, the small reddish-yellow reniform-macular luna and a row of black dots behind it; the traces of the undulate line is slightly lighter. Hindwing reddish greyish-brown with light fringes. California.

- puncticostata*. **P. puncticostata** Dyar is of a bright red-brown with 2 white costal-marginal spots as the beginning of the transverse lines being only partly marked lighter, behind the distal line dark dots on the veins; before the apex there are at the costal margin 3 more small, fine, white strigae; the reniform macula is a small, dark spot with a light reddish ring. Hindwing light brownish-grey, the veins and margin tinted reddish, with a dark discal dot and a dentate marginal line. Expanse of wings: 30 to 32 mm. California, in February.
- addenda*. **P. addenda** Sm. (23 e) is on the grey forewing strewn with a light yellowish brown, in the discal area strewn with black except the costal-marginal part; behind the dentate black transverse lines with black streaks in the veins, the maculae are very small, surrounded with blackish. Hindwing blackish-brown. The ♀ is dusted with carmine, in the discal area not darkened. From California.
- algula*. **P. algula** Sm. is a very robust species, on the forewing of a deep brownish purple red, dusted with violettish grey with mostly quite extinct markings; the discal area is often somewhat darker than the rest of the wing, the maculae occasionally in somewhat lighter rings, the transverse lines, in case they are present, double, the distal part of the posterior lines punctiform. Hindwing dull smoke-brown. Expanse of wings: 34 to 38 mm. From British Columbia.
- achsha*. **P. achsha** Dyar is marked the same, but the forewing is violettish-grey except the proximal half of the basal area and the greatest part of the discal area, both of which are purple red-brown; the maculae are separate, narrowly surrounded with light, the two transverse lines are double. Likewise described from British Columbia.
- hepatica*. **P. hepatica** B. & McD. (23 e). Forewing purple grey, dusted with reddish, with quite indistinct markings: transverse lines single, behind the distal line dots on the veins, the maculae represented by somewhat darker small spots, the ring-macula being merely a dot; the marginal area is slightly darkened and the extreme costal margin rosy red. Hindwing smoke-grey with pinkish fringes. Expanse of wings: 34 mm. Arizona. It is to be separated from the very similar *transparens* (32 f) by the strongly combed antennae.
- ferrirena*. **P. ferrirena** sp. n. (23 g) has violettish-grey forewings, the markings marked by accumulations of deep purple red-brown scales: the transverse lines very fine, interrupted and double, behind the distal line another row of dots on the veins, the undulate line likewise marked by very fine, chestnut-brown small dots, with an antemarginal row of black internodal dots; the reniform macula is finely surrounded with a violettish grey and is situated in a large red-brown trapezoid spot on the proximal upper end of which there is a triangular, equally coloured costal-marginal spot, behind which there follow besides 3 red-brown small strigae and subapically a larger, quadrangular spot. Hindwing white, veins and margin very finely strewn with brown. 1 ♂ from Bogotá (Colombia).
- transparens*. **P. transparens** Grt. (= *hamifera* Grt., *fringata* Sm.) (23 f) entirely resembles *hepatica*, but it has only serrate antennae provided with ciliary tufts. Forewing light reddish-brown, strewn with blackish and particularly at the base and proximal margin suffused with carmine, the transverse lines rather indistinct, the posterior line marked by a double row of dots on the veins; the somewhat darker pupilled maculae are surrounded with light yellowish, the marginal area is slightly darkened. Hindwing brown with earmine-pink fringes. Washington; California.
- praeses*. **P. praeses** Grt. (23 f) is extraordinarily variable and has the scantily white-strewn forewing changing from a light brown to purple black, with undulate transverse lines bordered with a brownish red and equally ringed triangular maculae, which are often contrastingly light, the reniform macula proximally bordered with black; the undulate line is proximally shaded with blackish. The blackish-brown hindwing is tinted pink.
- saleppa*. California. — The form **saleppa** Sm. (23 f) differs by its lighter ground-colour, the maculae are surrounded with a more blackish colour, the distal one being reniform, both more or less confluent, the central area at
- stigmata*. the proximal margin very narrow. From British Columbia. — **stigmata** B. & Benj. is almost black with contrastingly yellow maculae and marginal area.
- dukinfieldi*. **P. dukinfieldi** Schs. (23 g) is a larger species with plain, ciliated antennae; forewing pinkish-brown, strewn with blackish, with double transverse lines and dots on the veins behind the distal line, and between the whitish ringed maculae with a rectangularly flawed median shade; instead of the undulate line there is a row of small red-brown spots. Hindwing reddish-brown. Brazil (São Paulo).

39. Genus: **Orthosia** O.

This genus being also known as *Taeniocampa* Gn. or *Monima* Hbn. differs little from the very closely allied preceding genus, chiefly by the entire absence of tufts on the abdomen, as well as by the presence of a horny plate below the frons; the vertex and collar exhibit a keeled tuft, the prothorax and metathorax loose tufts. The range of about 15 species known from America extends over more northern regions; many species are also known from the palearctic region. Comp. Vol. III, p. 89 (*Monima*).

- mys*. **O. mys** Dyar (23 e) is on the forewing uni-coloured dark purple brown slightly strewn with grey, all the markings are entirely extinct. The whitish hindwing is tinted purple reddish, particularly towards the margin.
- caloramica*. California. — The form **caloramica** B. & McD. (= *agravens* B. & McD.) (23 f) is distinguished by the presence of a small dark spot representing the ring-macula, and of a broad moon-shaped shade representing the reniform macula subterminally there are traces of a double row of dots on the veins. The ♂ antennae are combed. Arizona.

O. ferrigera *Danby & Green* (= *strigatteria* *Hill.*) (23 f) has quite light yellowish-white forewings strewn *ferrigera*. with ferruginous brown, the veins strewn with black, with ferruginous-brown, undulate transverse lines; of the maculae only the reniform macula is present, pupilled ferruginous-brown and finely surrounded with blackish; the undulate line is proximally shaded with ferruginous brown. Hindwing reddish white, strewn with dark. Canada, United States. — **puncticostata** *Dyar* has almost extinct markings and no dark veins. *puncticostata*.

O. macona *Sm.* resembles the following species; forewing yellowish-grey, strewn with blackish, with *macona*. lighter veins; the transverse lines are coloured like the ground or somewhat lighter, with or without a blackish, mostly irregularly interrupted border, in the anterior line on both sides; the maculae are large, in lighter rings and below confluent, the reniform macula filled up with blackish owing to the rectangularly flawed median shade penetrating into it; the undulate line is often lighter than the ground, proximally more or less shaded with blackish. Hindwing light reddish with a dark central dot and a punctiform postmedian line. Expanse of wings: 34 to 37 mm. California.

O. flaviammula *Sm.* (23 g) is more reddish-brown, strewn darker, the beginnings of the almost extinct *flaviannula*. transverse lines marked by dark costal-marginal dots, the anterior line projecting light below the cell; the darker red-brown reniform macula is encircled with light; the light undulate line is towards the costal margin proximally bordered with a darker colour. Hindwing reddish-white, strewn with brown. Colorado.

O. annulimacula *Sm.* (23 g) is very similar, but much larger and more greyish-brown, the transverse *annulimacula*. lines marked by dark dots on the veins. From Texas.

O. rubrescens *Wkr.* (= *venata* *Sm.*) (23 f) is densely striated red-brown on a reddish-yellow ground, *rubrescens*. the discal area dusted darker; the posterior transverse line is marked by black and whitish streaks on the veins, the anterior line is absent; maculae large, in yellowish rings, the reniform macula with a darker filling, the yellowish undulate line is quite extinct. Hindwing yellowish greyish-brown. Canada, United States to Pennsylvania.

O. tenuimacula *B. & McD.* (23 h). Forewing uniformly smoothly yellow-reddish with double trans- *tenuimacula*. verse lines of which the parts facing each other are more distinct and darker brown; of the maculae only the sand-glass shaped, narrow reniform macula is present and surrounded with light yellowish, below pupilled greyish-brown, before it a rectangularly bent, broad, brown median shade; instead of the undulate line there is a row of small black spots; distal margin somewhat tinted pink. Hindwing smoke-grey with pink fringes. Described from Texas.

O. mediomacula *B. & Benj.* is extremely similar to *tenuimacula* (23 h), but much smaller and more *mediomacula*. slender with much shorter palpi, with shorter, more lobate valves. Forewing smoothly and uniformly scaled yellow-reddish grey with otherwise the same markings. Expanse of wings: 32 to 34 mm. From Arizona.

O. nongenerica *B. & Benj.* is likewise closely allied, of a more variable colouring, ochreous-yellowish, *nongenerica*. violettish-grey or red-brown, the extreme costal margin often yellowish; the markings are similar to those of the two preceding. The genital organ is similar to *mediomacula*, but it has a differently shaped clasper. Expanse of wings: 34 to 36 mm. New Mexico.

O. carminata *Sm.* (23 g) is of a variable colour changing from a quite uni-coloured light yellowish grey *carminata*. to a reddish yellow, on the veins dusted with purple pink; all the markings are absent except a small, light, extinct discal spot instead of the reniform macula. Hindwing blackish-brown with yellowish fringes. Colorado.

O. arthrolitha *Harv.* (23 h). Forewing reddish yellowish brown, strewn with blackish, with extinct *arthrolitha*. transverse lines and median shade, the posterior line removed far towards the margin and finely dentate with traces of a doubling; between the maculae with very indistinct yellowish rings there is a quadrangular dark spot in the cell; the undulate line consists of minute blackish internerval spots. Hindwing blackish-brown. California.

O. garmani *Grt.* (23 h) is reddish-brown, dusted dark, with quite indistinct transverse lines, the anterior *garmani*. line traceably double, the maculae incompletely surrounded with blackish, the ring-macula elliptical, also the coniform macula marked by black scales; the undulate line is quite indistinct, proximally with small black spots. Hindwing light brownish-yellow. United States (Illinois, Iowa).

O. pacifica *Harv.* (23 h) is on the light ochreous-brownish forewing densely striated and strewn with *pacifica*. red-brown and dusted with purple, the transverse lines marked by dots on the veins; the large maculae are in light rings, the reniform macula is below pupilled dark, between them an angular dark median shade; the light undulate line is proximally shaded with dark. Hindwing smoke-brown, in the form **infrapicta** *Strd.* *infrapicta*. beneath with a black streak in the cell. Canada to California. — The larva is green with fine white dorsal and subdorsal lines and a white transverse band on the raised 12th ring.

O. revicta *Morr.* (= *subterminata* *Sm.*) (23 g) is of a very variable colour, bluish-grey, yellowish-grey *revicta*. changing to red-brown, in light specimens strewn with brown, in dark specimens with whitish; the transverse lines on the averted sides bordered with whitish, the posterior line with black and white dots on the veins; the large maculae are in whitish rings and finely surrounded with brownish-red, the reniform macula below with a darker filling, between both a broad red-brown median shade; behind the white or yellowish

undulate line small red-brown or black spots. Hindwing light brownish, with darker veins and margin. Canada; United States to New York and Illinois.

alurina. **O. alurina** Sm. (23 h). Forewing purple-grey, tinted red-brown and strewn with black, with indistinct darker transverse lines, the posterior line dentate, the maculae surrounded with grey; the indistinct grey undulate line is proximally shaded with brown. Hindwing pinkish-grey, at the margin darkened. New York to Colorado.

hibisci. **O. hibisci** Gn. (= *alia auct.*, *confluens* Morr., *insciens* Wkr.) (23 i) is a very variable species with purple grey forewings dusted with red-brown except the proximal margin; the transverse lines are indistinctly grey, on both sides bordered with brown, behind the distal line with dots on the veins, the large maculae in grey rings, the reniform macula below with a dark filling; the indistinct grey undulate line is proximally bordered with brown, with larger spots near the two folds. Hindwing brown with light fringes. — In the form **hibisci**

latirena. the maculae are united. — **latirena** Dod. is distinguished by a very large reniform macula which, however, is not united with the ring-macula. — **proba** Sm. has a brick-coloured reddish ground-colour with scanty purple

proba. brown transverse striae, the transverse lines only marked by costal-marginal spots, without a median shade; from California. — **quinquefasciata** Sm. (23 h) is of a light flesh-coloured grey, without the transverse striae

quinquefasciata. with very distinctly developed transverse markings; from Vancouver, British Columbia, and Washington. — **inherita** Sm. (23 i) is pearl-coloured, hardly tinted reddish, with very fine transverse striae, of the transverse

inherita. lines only traces at the costal margin, but a very distinct median shade; Oregon, Washington, and Vancouver. — The form **inflava** Sm. is flesh-coloured, without the transverse striae, as in *quinquefasciata*, but the trans-

inflava. verse lines extinct, only the yellow undulate line very distinct, also the maculae surrounded with an intense yellow; from Washington and British Columbia. — **nubilata** Sm., from Colorado, is a form varying from grey

nubilata. to brick-red, with very irregular and scanty transverse striae, the transverse lines marked by an accumulation of these striae; the median shade occupies almost the whole discal area. — **malora** Sm. is dull grey without

malora. any red tints, and looks dusty smoke-grey owing to very dense transverse striae, with distinct though broadly faded transverse lines. From Canada. — **brucei** Sm. is of a bright reddish grey, the transverse striae not distinct, with distinct transverse lines, the undulate line proximally shaded with reddish, the median shade very prominent. Colorado.

40. Genus: **Perigonica** Sm.

Like the preceding genus, but with a small horny plate below the frons, a tuft on the first abdominal ring and more intense lateral hairing on the abdomen. Only known from America.

fulminans. **P. fulminans** Sm. (23 i) is on the forewing light brownish-red with quite extinct markings, single transverse lines with a row of dots on the veins behind the distal line, rather large, light-ringed maculae, the reniform macula darkened by the median shade penetrating into it; the most distinct is the whitish undulate line. Hindwing white, at the margin brownish-red. From Colorado and Arizona.

tertia. **P. tertia** Dyar. Forewing light reddish-brown, intensely strewn with black, with rather indistinct double transverse lines, the distal part of the posterior line being composed of dots on the veins; the maculae are in indistinctly lighter rings, the reniform macula is strangulated, below pupilled dark, before it the flawed median shade; the light, somewhat dentate undulate line is proximally spotted dark. Hindwing reddish-white, strewn with brown, particularly at the margin. Oregon to California and Arizona.

punctilinea. **P. punctilinea** Sm. (23 i) very much resembles the following *eldana*, but it has much less angular forewings and dark smoke-grey hindwings. The ground-colour of the forewing is the same dull yellowish grey, hardly tinted reddish and less strewn with black; the dots on the veins behind the postmedian are more distinctly prominent and are also visible before the anterior transverse line. California and Arizona.

eldana. **P. eldana** Sm. (= *tertia* Hmps.) (23 i) resembles *angulata* in its size and exterior, but it has combed antennae, and it is the species figured as *tertia* by HAMPSON in his Catalogue. Forewing dull yellowish with a very slight reddish tint, strewn with blackish, all the markings being present, though more or less incomplete, the transverse lines single with dots on the veins behind the distal line; the median shade is very distinct, particularly in the upper part as far as the reniform macula, then extending close in front of the postmedian, the undulate line on both sides bordered with dark; the maculae are rather large, finely encircled with blackish. Hindwing whitish with a smoked margin. Colorado, Arizona.

fermata. **P. fermata** Sm. has just as angular forewings as the following *angulata*, and the margin is not entire, but the fringes are undulate. Ground-colour and blackish strewn like in the two preceding, the markings extremely fine, as if they were scribbled, the transverse lines partly double, particularly the posterior line filled up with light, its distal part punctiform, but often also quite absent, the median shade similar as in *eldana*; the maculae are somewhat darker than the ground, in lighter rings, the reniform macula is very long; the narrow undulate line is light and coherent. Hindwing diaphanous whitish with slightly grey veins. Expanse of wings: 34 to 37 mm. California.

angulata. **P. angulata** Sm. (23 i). Forewing reddish ochreous, strewn with black; the anterior transverse line is absent except a black costal-marginal dot, and the median shade is only marked at the costal margin, the

posterior transverse line somewhat dentate with dots on the veins behind it; the light undulate line is very faint; of the maculae there is only the somewhat darker, indistinct reniform macula in a light ring. Hindwing very light reddish-yellow, strewn with brown at the margin. From California.

41. Genus: **Sideridis** Hbn.

Chiefly distinguished from the preceding genus by a loose, not keeled tuft on the prothorax. Comp. Vol. III, p. 96, and Vol. XI, p. 92.

S. rosea Harv. (23 k) has light cinnamon-red forewings strewn with a darker colour, with a darkened *rosea*. marginal area, with single transverse lines, the posterior line dentate; the large coniform macula and the two upper ones surrounded with a dark red, the reniform macula grey, below pupilled dark; the grey undulate line is proximally bordered with deep red. Hindwing whitish with a reddish-yellow marginal area. Canada and United States to Colorado.

S. normani Grt. (23 k). Forewing brownish-red, strewn with black, the proximal and postmedian *normani*. areas greyer, striated with a brownish red; the transverse lines are on the averted sides bordered with light grey, the large maculae in grey rings, the reniform macula below pupilled darker. Hindwing diaphanous white, at the margin and on the veins smoked. Canada and United States to New York.

S. congermana Morr. (23 l) is on the forewing purple brownish-red with dark veins and yellowish *congermana*. anterior transverse lines, the posterior line marked by white dots on the veins; the maculae blackish strewn with white and in whitish rings; behind the yellowish dentate undulate line the marginal area is lighter yellowish. Hindwing smoke-coloured grey, at the margin darker with red fringes. North-Eastern and Central States.

S. rubefacta Morr. (= vindemialis Grt.) (23 k) is somewhat larger than the similar preceding species, *rubefacta*. of a deeper purple red, dusted with a blackish brown, in the costal-marginal area strewn with whitish, the transverse lines and the coniform macula quite indistinct or absent; the maculae are surrounded with a quite indistinctly darker colour and in the centre strewn with whitish-grey; before the undulate line which is marked by whitish scales there is brownish shading. The yellowish-white hindwing is dusted with brown, particularly towards the margin, with light fringes. Canada to New York. — The larva is light brown, watered with blackish, with lighter dorsal and lateral lines.

42. Genus: **Ceramica** Gn.

Likewise very closely allied to the preceding genera and predominantly separated by the entirely tuftless thorax. Tibiae outside hairy, the abdomen with a basal tuft exhibits lateral hair towards the end. Only one species:

C. picta Harr. (= exusta Gn., contraria Wkr.) (23 l) has purple red forewings dusted with brown, the *picta*. costal halves strewn with white; no transverse lines except a whitish undulate line, the maculae in whitish rings, the reniform macula with a darker filling and proximally produced on the median, behind it a faded, yellowish strigiform spot. Hindwing white with brownish veins. Canada to Colorado. — The larva is black with broad yellow subdorsal stripes and lateral bands, on the dorsum strewn with yellow, and with fine, yellow, transverse lateral stripes, feet and ventrum dark red.

43. Genus: **Xanthopastis** Hbn.

Proboscis stunted, the short palpi long-haired; head and thorax with very long rough hair and scales, abdomen tuftless, laterally with long hair. But one very conspicuous species.

X. timais Cr. (23 k). Body black, forewing pink, spotted black and scaled orange-yellow round the *timais*. maculae, with alternately yellow and black antemarginal spots. Hindwing blackish. From Maine and Florida through the whole of Mexico and Central America to Brazil and Argentina and in the West Indies. The larva exhibits such remarkable local differences that its forms have even been denominated. The primary form which seems to prove that it originates from the Antilles, exhibits large, conical, black tubercles: f. **antillium** Dyar, it is red-brown with small yellow spots, the head, first and last rings as well as the forelegs *antillium*. being orange. — From there the species presumably proceeded to Guiana: **amaryllidis** Sepp with rudimentary *amaryllidis*. tubercles as in the other continental forms, the brown body covered with many roundish yellow spots. — Farther to the north in Panama the larva to our surprise exhibits again large tubercles, each with one hair, and the yellow spots of the body form more or less distinct interrupted longitudinal lines on the dorsum and subdorsally, on each ring 4 transverse rows: **molinoi** Dyar. — In Mexico we find the form **moctezuma** Dyar *molinoi*. without distinct tubercles, the yellow spots more or less united into longitudinal bands. Still farther to the *moctezuma*. north in Florida the bands are still broader and more coherent: f. **regnatrix** Grt. where particularly one lateral *regnatrix*. spot is united with that of the next ring, which is not the case in the Mexican form.

44. Genus: **Scriptania** *Hmps.*

Characterized by long ciliated eyes, the thorax covered with hair and scales and with loose tufts in front and behind, and a tuft on the first abdominal ring; all the rest as in the allied genera. Only few species, mostly from the southern part of America, are known.

syzygia.

S. syzygia *Hmps.* (23 k). The ground-colour of the forewing is white with a very slight purple hue, particularly in the basal, discal and marginal areas densely dusted and strewn with dark brown, with a black basal ray, double transverse stripes filled up with white, and whitish maculae pupilled brown and surrounded with black, touching each other on the median; before the undulate line there are small black sagittae. Hindwing reddish-brown. Patagonia.

nordenskjoeldi.

S. nordenskjoeldi *Stgr.* has greyish-white forewings dusted and strewn with blackish-brown, particularly much in and round the cell-end and in the marginal area except the apex with single transverse lines being on the averted sides bordered with white; the large coniform macula is blackish-brown, surrounded with black, the two upper maculae are grey, in whitish rings and surrounded with black, the reniform macula is on the median proximally produced; the veins behind the cell except the middle radial branch are striped white and traverse the black and white spotted undulate line. Hindwing blackish-brown with whitish fringes. Expanse of wings: 36 mm. Patagonian Andes.

michaelseni.

S. michaelseni *Stgr.* (23 l) is similar, the ground-colour more purple greyish-brown, all the veins striped white, the reniform macula below not produced, before the whitish posterior transverse line there are small black sagittae, similar ones near the proximal margin before and behind the antemedian; the white undulate line terminates into the apex and it is below the centre pointedly dentate as far as the margin. Hindwing brownish-grey with white fringes. Described from Fireland.

optima.

S. optima *Dyar.* Dusted light brown on a silvery white ground, the brown perhaps a fresh olive-green; the cell is narrow silvery white, the maculae are pupilled brown, the reniform macula proximally surrounded with black, distally faded, between it and the ring-macula on the median a black streak; subterminally a white band, fadedly dentate and partly bordered with black, extending oblique to the apex, and with a white tooth to the margin above the lower radial branch; the undulate line itself is white, narrow, above inclining to black. Hindwing of a pure white. Expanse of wings: 29 mm. From Mexico (City) in June.

demerodes.

S. demerodes *Dyar.* Forewing greyish-white, extensively strewn with blackish-grey; the maculae, a narrow subcostal stripe, a broad stripe on the median, a narrow one on the proximal-marginal vein, and the margin are white; between the maculae below the cell-end and between the submedian fold and the lower median branch a black line. The whitish hindwing is particularly at the margin dusted with grey, with a small, faint central dot. Expanse of wings: 27 mm. Mexico (City) in June. — The two latter species may be doubtfully placed here.

45. Genus: **Strigania** *Hmps.*

Entirely like the preceding genus, but the thorax and abdomen tuftless. All the species are American.

lithophilus.

S. lithophilus *Btlr.* (23 l) with serrate antennae has ochreous-yellowish forewings and obliquely to the apex the discal part blackish-brown except the costal margin which is only strewn with dark; the median is light ochreous-yellowish, the veins of the marginal area are black, on both sides bordered with ochreous, a basal ray and an inner-marginal stripe near the base are black; the confluent maculae are in whitish rings; instead of the undulate line black, light-pupilled small sagittae. Hindwing whitish, veins and margin smoked. Chile.

scripta.

S. scripta *Mssn.* (23 l) as well as the following species exhibit only ciliated antennae. Forewing light ochreous, dusted with brown except the veins; the black transverse lines are on the averted sides bordered with white, the posterior line connected with the apex; between the whitish, brown-pupilled maculae there is a V-shaped black spot, and a reverse similar spot before the ring-macula; the undulate line consists of black wedges on which there are small white crescents, behind them a whitish marginal band. Hindwing yellowish white, on the veins and margin brownish. Bolivia.

calligrapha.

S. calligrapha *Btlr.* (24 a) is larger than *scripta* and without the white terminal band, the transverse lines are double, dark brown, filled up with ochreous yellowish, the large red-brown coniform macula surrounded with a darker colour exhibits an ochreous-yellowish hook-shaped spot behind it, the ground between the upper maculae without the black V-spot; the undulate line is ochreous with black sagittae before it, traversed by the light-edged, dark upper median and lower radial branches. Hindwing light brownish, at the margin darker. Chile.

jucunda.

S. jucunda *Mssn.* (23 k), described as *Acronycta*, owing to its structure belongs hereto; forewing on its white ground densely strewn with olive-green, and in some places, particularly the postmedian area, dusted

with black; transverse lines double, interrupted by black, filled up with white in the shape of spots, behind the large coniform macula, being surrounded with black, a white dentiform spot; the upper maculae in the centre strewn with olive, in white rings and surrounded with black; the undulate line consists of black, white-pupilled spots and is below the apex and below the centre broadly interrupted by olive-green strewing; fringes black traversed by white. Hindwing white, at the distal and costal margins darkened by grey. From Colombia and Bolivia.

S. permira *sp. n.* (23 l) I also place yet hereto owing to its structure, although its exterior is quite *permira*. different; the eyes are very conspicuously long-haired, surrounded by dense black cilia; the legs, particularly the rear tarsi are long and thin, the fringes of the wings uncommonly broad, about 2 mm. Colour of forewing greyish-brown with a slight coppery reflection and greasy brilliance, somewhat like in *Amphipyra tragopoginis*, strewn with black, with traces of a dentate posterior transverse line and a blackish, somewhat lighter pupilled darkening at the cell-end, no other markings; a light undulate basal line of the fringes contrasts with the somewhat darkened marginal area. Hindwing whitish, at the margin smoked, in the ♀ darker. According to a couple from the Upper Madre de Dios (Peru), taken by FASSL.

46. Genus: **Tmetolophota** *Wkr.*

Characterized by a very distinctly bipartite tuft on the prothorax which is only covered with hair: on the first abdominal ring there is a tuft. All the rest as in *Perigonica* and *Sideridis*. But one American species is known:

T. polygona *Drc.* (24 a) is a large beautiful species, purple grey, dusted with brown, with oblong black *polygona*. wedges (well recognizable from the figure) representing the surroundings of the maculae and on both sides bordering on the subterminal area. Hindwing reddish white, on the veins and margin brownish. Peru and Bolivia.

47. Genus: **Cirphis** *Wkr.*

A polytypical, cosmopolitan genus of an uncommonly homogeneous exterior; the thorax is covered with hair and scales, in front and behind with loose tufts and a tuft on the first abdominal ring, the tibiae long-haired. The ♂♂ often exhibit secondary sexual marks in the shape of especially thick tufts of hair and scales on the legs or on the abdomen, as well as modifications of scales on the wings beneath. The larvae generally live on grasses. As to further particulars comp. Vol. XI, p. 99.

C. philipalpis *Grt.* (24 a) is recognizable by a loose hair-tuft on the upper surface of the second palpal *philipalpis*. joint. Forewing light flesh-coloured, strewn with black, with a white costal margin; the anterior transverse line is marked by 2 black dots, the posterior line is pointedly dentate; instead of the reniform macula a light discal spot with a black dot in the lower cell-angle and an extinct dark spot behind it. Hindwing yellowish-white, at the margin smoky. From Florida.

C. multipunctata *Drc.* (24 a) looks somewhat like the preceding; forewing reddish sand-coloured, strewn *multipunctata*. with black, with traces of both transverse lines, the posterior line being almost complete with a row of dots on the veins behind it; at the cell-end there is a small lighter spot with a black one before it, indicating the reniform macula, before it the cell is shaded with blackish; subapically traces of a darker triangular marginal shade. Hindwing whitish, at the margin ochreous brownish. Panama.

C. pseudargyria *Gn.* (24 b) has the abdomen covered with very thick woolly hair, with a very large *pseudargyria*. anal tuft and very long-haired middle tibiae, the forewing ochreous grey, strewn with purple red and dusted behind the cell-end; transverse lines dark, the posterior line dentate with dots on the veins; the maculae yellowish-white, pupilled reddish. Hindwing greyish-brown. — The form **callida** *Grt.* (= *derufata* *Strd.*) is *callida*. greyer without the reddish tints. From Canada to Texas. — The larva is light straw-coloured with a broad whitish lateral stripe strewn with reddish, and brown-edged lighter longitudinal lines.

C. multilinea *Wkr.* (= *solita* *Wkr.*, *lapidaria* *Grt.*) (24 a) is a very common species, ochreous-yellowish *multilinea*. with white, red-brown striped veins and internerval streaks, below the median a broad dark nebulous stripe, the apex parted by a light patch; behind the lower cell-end extends another nebulous stripe to the margin: below the centre of the median, in the lower cell-end and postmedianly on the middle radial branch and on the lower median branch one black dot each. Hindwing white, on the veins and margin brownish. From Canada to Paraguay.

C. chejela *Schs.* is allied to *multilinea* (24 a), but the ground-colour of the forewing is more lilae-grey; *chejela*. the veins, one stripe each at the costal margin and on the submedian fold white, finely bordered with brown, and fine, brown, white-edged stripes are in the cell below the median above the proximal-marginal vein and

between the branches rising from the cell; the apex is parted by a whitish patch; in the cell-end and post-medially on the lower median and middle radial one black dot each. Hindwing transparent white. Expanse of wings: 36 mm. Guatemala.

commoides. **C. commoides** Gn. (24 b) is larger and stronger, with dark reddish-brown hindwings, a darker brownish ground-colour of the forewing, with more prominently white veins, particularly the median; above the proximal margin a black longitudinal stripe, in the marginal area black internerval streaks; Canada to Mexico.

phragmitidicola. **C. phragmitidicola** Gn. (24 b) is very similar, often still larger and with white hindwings being brownish only at the margin. This species and *commoides* have smaller hair-tufts on the anterior and posterior tibiae than *multilinea* (24 a). Canada to New Mexico. — The larva is straw-coloured brownish, darker striped, with a light, darker edged dorsal line, broader subdorsal lines and a narrow light lateral line.

roseola. **C. roseola** Sm. (24 b) is on its light ochreous ground tinted pink with white veins finely bordered with pink, and pink internerval stripes, in the lower cell-end a small white spot with a black dot, behind it 2 postmedian black dots. Hindwing white, apex and margin smoked yellowish. Canada to Washington and Oregon. — The larva is light brownish-yellow with a narrow white, brown-edged dorsal line and a black subdorsal band, with a white one below it; a lateral white line and a white band below it in a grey strewn ground. It lives on grasses.

farcta. **C. farcta** Grt. (24 c) is very similar, on an average larger, without the pink tints and marked much paler, the veins less clearly marked white and without the distinct white spot in the lower cell-end. Hindwing of a purer white. California. — The larva resembles that of *phragmitidicola*, but it is lighter straw-coloured with a distinct dark shade between the lateral and stigmatal lines.

socorrensis. **C. socorrensis** Dogn. Forewing light ochreous-brown, submedianly and in a small spot behind the cell darker; in the basal half of the proximal margin and at the cell-end accumulations of white scales; the veins are partly white with brown internerval streaks. Hindwing blackish with an ochreous-yellowish basal line of the fringes. Below the cell of the forewing is long-haired. Expanse of wings: 39 to 42 mm. Colombia (Mt. Socorro).

pyrastis. **C. pyrastis** Hmps. (24 b) has golden yellow forewings scantily strewn with black; the veins, costal-marginal area and 2 broad stripes at the proximal margin and above the lower median vein and obliquely to the apex dusted with flesh-coloured reddish; the end of the median is lighter than the ground; postmedian black dots on the veins, and the apex parted by yellowish. Hindwing diaphanous white, in the apical marginal half brown. Paraguay.

velva. **C. velva** Schs. approximates *pyrastis* (24 b), on the forewing the costal-marginal area, the proximal margin, a shade below the cell-end and between the median branches being united with an oblique subapical shade, are purple grey strewn with black, the rest of the ground of the wing yellow mixed with red, in the marginal area dusted with purple grey; at the end of the median a short white streak, behind it a postmedian row of dots on the veins. Hindwing diaphanous white. Expanse of wings: 33 mm. Guatemala.

clarescens. **C. clarescens** Mschlr. (24 a). Ochreous-brownish, tinted pink, at the costal, proximal and distal margins scantily strewn with black, with a black, below brownish-red basal ray and a similar one above the proximal margin. On the median a white, at the cell-end hook-shaped stripe with a black dot in the centre, 2 veins from the lower cell-end are likewise white, above them black internerval streaks, the space above the lower median branch dusted with lilac grey and with a postmedian row of black dots on the veins; the apex is parted by an oblique grey shade, the fringes are speckled dark brown. Hindwing whitish, veins and margin reddish-yellow. Cuba, Porto Rico, Bahamas.

opalisans. **C. opalisans** sp. n. (24 c) is a larger species with an intense silk lustre and iridescent hindwings; forewing light yellow, but the ground-colour is pure only in an oblique apical patch, whilst the rest of the wing is densely strewn with red-brown, in the cell and behind it uniformly dusted, the costal margin broadly whitish with a purple grey tint, and like the similarly coloured veins strewn with blackish; at the end of the median there is a pure, white small spot, above it a minute accumulation of black scales; a faint, bent postmedian row of dots. Hindwing diaphanous whitish, at the margin and on the veins smoky. One ♀ from the Cañon del Monte Tolima (Colombia).

scirpicola. **C. scirpicola** Gn. (= *calpota* Sm.) (24 c) resembles a dark *phragmitidicola*, being brownish-ochreous with lighter veins bordered with a darker colour and dark internerval lines, below and above the median with a dark nebulous stripe being continued to a dark marginal triangle; at the lower cell-end there is a white dot. Hindwing dirty yellowish-white with darker veins and margin. Expanse of wings: 35 to 38 mm. Texas.

imperfecta. **C. imperfecta** Sm. (24 c) is more brownish-grey, strewn with black, with yellowish tinted stripes submedianly, in and behind the cell-end and obliquely to the apex, with a black basal and proximal-marginal ray, a short, white, hook-shaped streak at the end of the median and a black dot in the lower cell-end; in

the marginal area the veins are striped whitish, the most distinctly the lower radial branch, and with black internerval streaks; a postmedian row of black dots on the veins. Hindwing diaphanous white, at the margin brownish. From Arizona and Mexico.

C. insueta Gn. (= *adonea* Grt., *mimica* Streck.) (24 c) somewhat resembles *roseola* (24 b), but it is *insueta*. not dusted in a pink, but more brownish-red, with a black basal ray, and the hindwing is more yellowish-white, the veins and margin dusted greyish-brown. Canada to Colorado. — The larva likewise resembles that of *roseola*, but the markings are fainter and faded, not distinctly defined, the colour more brownish, less yellowish-white, the subdorsal lines and lateral bands greyish-brown, not much darker than the ground. On grasses. — **heterodoxa** Sm. is a paler form with less distinct markings, whereas in **dia** Grt. (24 e) the brownish-red tints *heterodoxa*. *dia*. are absent altogether, and the hindwings are darker. The latter form occurs from Canada to Arizona.

C. megadia Sm. (24 d) is a distinct species, ochreous-brown with distinctly whitish, dark-edged *megadia*. veins, an almost coherent postmedian row of dots on the veins, a long, deep black basal ray and a black ray in and behind the cell-end, interrupted by the thick white transverse vein; the marginal area is darkened by long, blackish wedges. Hindwing yellowish-white, at the margin somewhat smoky. Canada (Alberta).

C. secta H.-Schäff. (24 b) is a very characteristic, small, greenish-yellow species scantily strewn with *secta*. black, with a red-brown stripe below the cell and a fine proximal-marginal streak near the base; behind the cell the veins are on both sides striped red-brown, the thickest stripe being above the lower radial branch; in the lower cell-end there is a black dot, behind it a bent postmedian row. Hindwing greenish-yellow, at the margin reddish-brown, in the ♀ lighter. From Cuba.

C. albifasciata Hmps. (24 d) has ochreous-yellow forewings dusted with a brownish red and strewn *albifasciata*. with black, with a faded brown subcostal stripe, a white-striped median with a brown stripe below it, and a broad faded, whitish submedian stripe; in the centre and at the end of the cell some accumulated black scales, and instead of the coniform macula a V-shaped mark; the veins behind the cell are striped whitish and on both sides edged with brown, the most distinctly the upper median branch and the lower radial branch, between them brown streaks; besides the usual postmedian row of black dots on the veins, as well as a dark oblique shade from the apex and below it a marginal triangle; hindwing diaphanous white with single black marginal dots. Colombia, Brazil Paraguay.

C. anteroclara Sm. (24 d) is very similar to *insueta* (24 c), but it has no brownish-red, but a more *anteroclara*. olive-greenish tint, the markings being otherwise the same. Hindwing yellowish white, margin and veins tinted brown. The species is larger on an average and without the black basal ray. Only from Canada (Alberta).

C. pendens Sm. is a dark species of a reddish-yellow ground-colour with smoke-grey shades and *pendens*. strewing, and a very characteristic smoke-grey nebulous stripe along the median without any interruption to the margin where it extends as far as the apical shade, and therein is the small white spot at the cell-end; the other markings do not differ from the other species. Hindwing smoke-grey with darker veins and a brighter part towards the base. Expanse of wings: 33 mm. Florida, taken in May.

C. oregona Sm. differs from the allied though much larger *anteroclara* (24 d) by entirely white *oregona*. hindwings without a brown margin and with a more brownish or reddish-brown ground-colour; the postmedian row of dots on the veins is somewhat connected, forming a regular dentate posterior transverse line. Expanse of wings: 30 mm. Oregon.

C. rivorum Gn. (= *pampa* Schs.) (24 d) initiates the species without a dark nebulous stripe below *rivorum*. the median. Forewing yellowish-white, at the costal and proximal margins scantily strewn with black, the white veins are on both sides edged with a purple brown, between them similar internerval streaks; in the lower cell-end there is a black dot; a postmedian row of dots on the veins. Hindwing white, in the ♀ smoky in the apical half. Brazil to Paraguay, and in Cuba.

C. carnea sp. nov. (24 d) is very much like *rivorum*, but with much less prominent markings; forewing *carnea*. pinkish brownish, submedianly and in an oblique apical patch ochreous-yellowish, the broad costal-marginal area and the veins violettish-white, the veins very finely edged with a hardly darker colour, in the marginal area with faint internerval stripes; the median is towards its end somewhat broader and of a purer white, above it a minute black spot, a similar one below the rise of the lower median branch; the postmedian row of dots as well as the marginal dots are very feebly marked. Hindwing transparent whitish, veins and margin smoky. 1 ♀ from Medina (East Colombia).

C. sarcistis Hmps. (= *extincta* Drc.) (24 d) is of a more flesh-coloured reddish tint, the veins are *sarcistis*. less distinctly white and much more feebly edged with dark than in *carnea*, otherwise very similar. Hindwing diaphanous purely white. Costa Rica.

- calgariana*. **C. calgariana** Sm. is larger than the preceding, pinkish-brown, the median, the upper median branch and lower radial branch more distinctly white than the other veins, below the median a slight nebulous stripe. Hindwing white, veins and margin brownish. Canada (Alberta).
- sarcophaea*. **C. sarcophaea** Hmps. (24 e) is hardly to be mixed up with any other species owing to the almost black hindwings and their reddish fringes. The shape of the wings is broader than usual, the ground-colour pinkish-brown, the veins somewhat lighter, not white, in the lower cell-end a small blackish spot; no postmedian dots on the veins. Peru.
- macoya*. **C. macoya** Schs. approximates *jalisca* (24 e). It is ochreous-yellowish grey scantily strewn with black, the other markings like there, though without the white in the cell-end, where we only notice a black dot as the continuation of a fine stripe above the median, behind it, between the base of the 3 radial branches, there is a larger black spot. Hindwing white with black marginal dots. Expanse of wings: 35 mm. Guatemala.
- jalisca*. **C. jalisca** Schs. (24 e) has an ochreous-yellowish ground-colour with a very distinctly prominent, triangular subapical shade at the distal margin; the veins are scarcely lighter, but edged with a darker colour, and with red-brown internerval stripes; in the lower cell-end there is a faded red-brown spot with a white dot in it, and a postmedian row of black dots on the veins. Hindwing diaphanous white, veins and margin ochreous-yellowish. From Mexico and Cuba.
- clara*. **C. clara** sp. nov. (24 e) is much larger than *jalisca*. Forewing of a pure and uniform pale straw-colour, without any black strewing, with whitish, finely darker striped veins, and olive-brownish internerval stripes in the marginal area, with an intense, darker, subapical marginal triangle as in *jalisca*, the median and the two branches rising from the lower cell-angle of a purer white, the former expanded into a spot at the end; below the rise of the lower median branch a black dot, a bent postmedian row and before the margin very fine internerval dots. Fringes darker reddish-brown. Hindwing diaphanous yellowish-white, veins and margin brownish. 1 ♀ from the Cañon del Monte Tolima (Colombia).
- polystrota*. **C. polystrota** Hmps. (24 e) is larger on an average, dusted more pinkish brown, the veins more distinctly striped white, without the prominent dark triangular spot at the margin. Brazil to Paraguay, and in Trinidad.
- microsticha*. **C. microsticha** Hmps. (= *extincta* Drc. nec Gn., *solita* Drc. nec Wkr.) (24 i) resembles *polystrota*, but it is not brownish but somewhat flesh-coloured on a whitish ground; the postmedian row of dots on the veins is occasionally connected, so that it may form a complete posterior transverse line. Hindwing white, in the ♀ on the veins and margin brownish. Mexico, Costa Rica, Panama.
- cholica*. **C. cholica** Dyar (24 f) is very much like *microsticha*, on the yellowish ground dusted with grey, with lighter veins and a grey shade along the median; in the lower cell-angle a small, yellowish, black-pupilled spot. The anal tuft in the ♂ is very much less developed and almost entirely absent. Mexico (Zacualpan) in May.
- pallisea*. **C. pallisea** Sm. (24 f) is a very light yellowish-white species, only in the costal-marginal area a little trewn with black, otherwise with the same markings as in the two preceding species. On the white hindwing the veins and margin are tinted ochreous-yellowish. United States (Colorado, New Mexico, Arizona, Durango).
- humidicola*. **C. humidicola** Gn. (= *extenuata* Gn., *tayaudi* Gn., *dorsalis* Wkr., *solita* Drc. p. p.) (24 e) is of a somewhat darker ochreous colour than the preceding, recognizable by 3 dark lines on the collar; the postmedian row of dots is mostly extinct except 2 dots, at the distal margin with a subapical darker nebulous triangle. Hindwing white, the veins and margin ochreous yellowish. From Mexico to Paraguay and Argentina, and everywhere common.
- juncicola*. **C. juncicola** Gn. (= *adjuta* Grt.) (24 f) has much darker hindwings than the preceding, the whole marginal half is broadly darkened with a blackish brown. The ochreous-yellowish forewing is strewn with black at the costal and proximal margins; below the white median there is a more intense brownish-red nebulous stripe; the postmedian dots on the veins are mostly reduced to two. United States (Alabama, Texas).
- microgonia*. **C. microgonia** Hmps. (= *extincta* Drc. part., *salebrosa* Drc.) (24 f). The ochreous-yellowish forewing is tinted reddish in and round the cell, at the costal margin more whitish, the markings as in *juncicola*, but the white median forms a short upward hook at the cell-end; the triangular subapical marginal shade is rather distinct. Hindwing yellowish-white, on the veins and margin brownish. Mexico to Panama.
- alboradiata*. **C. alboradiata** Hmps. (24 g) is very easily recognizable, the brownish-grey, darker strewn ground exhibiting the upper radial branch, the upper median branch and the proximal-marginal vein on both sides broadly edged with white, the middle radial branch only on the lower side; the median is striped white, and besides there is a black basal ray, without any other markings or dots. Hindwing greyish-brown with white fringes. Patagonia.

C. cinereicollis Wkr. (= solita Drc. part.) (24 f). Forewing reddish ochreous, scantily strewn with black with whitish veins except the median which is broadly striped brownish-grey, which colour continues above the lower radial branch to the margin; there is a black basal ray and in the lower cell-angle a white dot, behind it a bent row of black dots on the veins. Hindwing diaphanous white. From Mexico to Argentina. *cinereicollis.*

C. striguscula Dyar (24 g). Forewing greyish-brown, the costal margin broadly lighter, more whitish, the whole wing coarsely strewn with black, with lighter, finely dark-edged veins and strong black internerval streaks which are still more thickened at the rise of the subcostal branches, and with a very thick, somewhat faded black basal ray, also in the upper half of the cell 2 black stripes; the median is darkened grey, and more black towards the cell-end which exhibits a small white spot below; a postmedian row of black dots which below the costal margin becomes a very oblique line; in the apex as usually an oblique lighter patch. Hindwing quite transparent and very iridescent. Mexico to Brazil and Colombia. *striguscula.*

C. seteci Dyar is allied to *cinereicollis* (24 f), but the dark longitudinal shade is not black, but light grey, the small white spot at the cell-end is small and united with the whitish median; the markings are finer and lighter, the row of dots is very faint, on the whole much lighter and not contrasting. Expanse of wings: 28 to 31 mm. Panama. *seteci.*

C. latiuscula H.-Schäff. (= subpunctata Harv., senescens Mschlr., tinila Schs., complicata Streck., *latiuscula*, mizteca Schs., extincta Drc.) (24 g) has grey forewings more or less tinted reddish-yellow, also on the white veins strewn with black, the median striped dark with a white dot above its end. Hindwing diaphanous white, on the veins and margin brownish, — in the form **orizaba** Schs. (24 g) darkened quite brown. United States (Texas) to Brazil and Peru. — It remains a mooted question whether **punctifera** Mschlr. with white hindwings from Surinam is a form of this species or a separate species. *orizaba. punctifera.*

C. incognita B. & McD. (24 g) is allied to *latiuscula*, owing to its white hindwings still more closely to its questionable form *punctifera*, but it is much smaller, much lighter and without the reddish-brown tinge; from the likewise similar *cinereicollis* it differs by the absence of the black basal ray. The ground-colour is a light ochreous yellowish; the dark stripe of the median is interrupted at the cell-end by a small, white, comma-shaped spot and extends to the postmedian line which consists of dots on the veins, which, however, may also be connected forming a complete line. Described from Brownsville (Texas). *incognita.*

C. tritonia Hmps. (24 h) is one of the largest species, on the forewing ochreous brownish, darker, at the costal and proximal margins strewn with black without any white-striped veins, in the marginal area with dark internerval streaks, with a white, distally and proximally black-scaled dot at the lower cell-angle, and with a dentate, blackish posterior transverse line. Hindwing diaphanous white, the veins and margin ochreous-yellowish. Colombia, Brazil. *tritonia.*

C. dissimilis B. & McD. (24 h) is described according to a single ♀ the habitat of which seems to be not quite certain, and looks very different from all the species known. Forewing deep purple brown with a very indistinct marking; the small round ring-macula is pupilled yellowish-brown just like the reniform macula; the transverse line is marked by yellowish-brown lunae, the anterior line only by one near the proximal margin, instead of the undulate line there are a series of dark small spots distally pupilled yellowish, at the costal margin near the apex 2 or 3 white streak-shaped spots. Hindwing smoke-brown, towards the base diaphanous. From Arizona (?) (Chiricahua Mts.). *dissimilis.*

C. unipuncta Haw. (= extranea Gn., antica Wkr., trifolii Btlr., adultera Schs.) (24 h) is presumably distributed in the whole world and everywhere common. It occurs in America from Canada down to Chile and is rather variable. The nomenclatural type is light red-brown, moderately striated, with light reddish, quite extinct maculae and with a white, often on both sides black-edged small spot at the lower cell-end: it has a characteristic dark oblique stripe parting the apex. — f. **saccharivora** Btlr., described from Chile, but also found elsewhere, is of a deeper red-brown colour. — f. **punctulata** Bleh. (24 h) is of a greyer or ochreous-yellowish tinge and much more coarsely strewn, with a stronger apical stripe and very distinctly contrasting maculae in a darkened cell. It occurs from Mexico to Chile in numerous transitions to the type. — The green or brown, darker striated larva with white longitudinal lines lives on grasses and species of grain. Compare also Vol. III, p. 99. *unipuncta. saccharivora. punctulata.*

C. arcupunctata Mssn. (24 i) is a large brown species with broad wings, black-striped veins, a red-brown submedian stripe and dark internerval stripes in the marginal area; the maculae are marked by several black dots, behind them a postmedian row of black dots on the veins. Hindwing ochreous brown, in the marginal area darkened. The ♂ antennae are strongly serrate and provided with ciliary tufts. Ecuador and Colombia (Monte Tolima). *arcupunctata.*

C. inconspicua H.-Schäff. (= extincta Drc. p. p., solita Drc. p. p.) (24 i) is on the forewing ochreous-yellowish, strewn with black, with a black dot in the lower cell-end and a dark spot behind it; a dentate transverse line is marked by dots on the veins. Hindwing diaphanous white. Mexico to Paraguay, also in Cuba and Jamaica. *inconspicua.*

- macellaria*. **C. macellaria** *sp. n.* (24 i) is allied to the preceding, but uniformly pinkish-brown, scantily strewn with black, with hardly lighter, finely dark-edged veins, and blackish internerval streaks in the marginal area; the median itself is shaded with blackish, with a blackish diffuse spot behind the cell as in *inconspicua*; a postmedian row of black dots, on the margin extremely fine internerval dots, below a somewhat lighter apical patch a dark marginal triangle. Hindwing purely white with yellowish fringes. Panama (Lino).
- mocoides*. **C. mocoides** *Dogn.* (24 i). Forewing ochreous-yellowish, strewn with a brownish grey except a stripe on the discal fold from the centre of the cell to the margin, turning then towards the apex; a black basal ray is present, as well as a series of black internerval dots. Hindwing transparent yellowish white, the proximal and distal margins dusted with brown. Ecuador.
- tacticinia*. **C. lacticinia** *Dogn.* Forewing ochreous-yellow, in the disc flesh-coloured, the veins of the same colour, but distinctly prominent, the spaces between somewhat dusted black, with a postmedian row of dots on the veins. Hindwing white, the veins and margin blackish. Described from Colombia (Quindiu Pass).
- falklandica*. **C. falklandica** *Bthr.* (24 i) has light brown forewings with a faded black basal ray and a similar stripe in the cell-end and behind it, being on the transverse vein expanded into a spot; the proximal-marginal vein, the end of the median and the branches proceeding from here are whitish; an extinct dentate posterior transverse line is present and a row of small subterminal spots except the apex. Hindwing yellowish-white, the veins and margin brownish. Falklands Islands.
- remota*. **C. remota** *Stgr.* Forewing ochreous-brown with a black basal ray, in the costal-marginal area dusted purple grey, the median grey and expanded like a spot behind the cell-end; a spot above the centre of the proximal margin, an oblique apical stripe and the margin are likewise dusted grey; a postmedian row of black dots on the veins and before the margin brown internerval streaks. Hindwing yellowish white, veins and margin brownish. Expanse of wings: 40 mm. Patagonia.
- quadrannulata*. **C. quadrannulata** *Morr.* (24 i) has light yellowish-brown forewings dusted with a brownish grey along the median and behind the cell as far as the costal margin and to the submedian fold; a black basal ray terminates at the small coniform macula which is marked black and white; the upper maculae are small, white, encircled with black and pupilled red-brown; instead of the undulate line there are minute black and white sagittae above and below the middle radial branch. Hindwing yellowish-white, at the costal and distal margins brownish. From the United States through Mexico to Paraguay; specimens from these southern habitats are more intensely dusted black.
- colorata*. **C. colorata** *Dogn.* Forewing yellowish-red, the proximal-marginal vein, median, and the veins in the distal-marginal area are lilae; the anterior transverse line is marked by 3 dots, the posterior line is dentate and completely present, on the veins accentuated by dots, and there are also traces of a median shade obliquely at the costal and proximal margins; the ring-macula and reniform macula are indistinctly reddish-yellow, the latter pupilled blackish; subapically there is yet a lilae triangular marginal shade. Hindwing yellowish, distally strewn with blackish. Expanse of wings: 38 mm. Colombia (Quindiu Pass).
- biforis*. **C. biforis** *sp. n.* (24 k) is similar to *colorata*. Forewing light reddish-yellow, the costal part densely dusted and strewn with a lilac grey, the median, subcostal and proximal-marginal vein lilac grey, the end of the median thickly white, the branches parting from it whitish, finely edged with greyish-brown; the cell is filled up with red-brown in which the yellow maculae are very conspicuous: the ring-macula is horizontally elliptical, the reniform macula below with a black dot; the posterior transverse line is red-brown, intensified by blackish internerval dots and behind it a series of thick black dots on the veins; below the yellowish oblique apical stripe there is a lilae grey marginal triangle. Hindwing diaphanous whitish, the veins and margin broadly darkened. According to 3 specimens from Mexico (Zacualpan, Misantla), obtained from Mr. ROBERT MUELLER.

48. Genus: **Borolia** *Mr.*

Distinguished from the very closely allied preceding genus by the entirely tuftless thorax and abdomen. The species predominate in the Indo-Australian and African regions, but the northern parts of America also have some representatives. Comp. Vol. XI, p. 100 (*Sideritis*).

- extincta*. **B. extincta** *Gn.* (= *oriza* *Schs.*, *oaxacana* *Schs.*) (24 i). The light ochreous yellowish forewing is hued with purple pink; the white-striped median is somewhat expanded towards the lower cell-end in which there is a black dot; behind it a postmedian row of dots on the veins, and on the margin black internerval dots. Hindwing white, at the margin brownish, Florida, Mexico.
- texana*. **B. texana** *Morr.* (= *ligata* *Grt.*) looks on the forewing like *extincta*, but it has entirely white hindwings and is perhaps only a local form from Texas.

B. rimosa *Grt.* has yellowish-white forewings hued with a pinkish brown and scantily strewn with *rimosa*, black, with the same white stripes as the preceding; in the lower cell-angle there is a black dot and above the lower radial branch a small black stripe; a postmedian bent row of dots on the veins. Hindwing white, at the margin light brownish. From New York.

B. flabilis *Grt.* Forewing light ochreous yellowish, with a slight reddish-brown tint and scantily *flabilis*, strewn with black, with the same white stripes as the preceding; in the lower cell-angle there is a minute black spot; the postmedian row of dots is only traceable, on the margin internerval dots. The white hindwing is slightly smoky towards the apex. Expanse of wings: 36 mm. United States.

B. amygdalina *Harv.* (= *punctata* *Strd.*) has on the ochreous yellowish forewing also a pinkish-brown *amygdalina*, tinge, scantily strewn with black, with white, brown-striped veins and in the marginal area brown internerval streaks; in and behind the cell-end there are single black dots; behind them follows a row of black dots on the veins; the apex is parted by an oblique nebulous patch. Hindwing white, at the margin yellowish brown. United States (Maine).

B. limita *Gn.* (24 k) is very similar, but without the reddish tint on the forewing and with an entirely *limita*, extinct postmedian row of dots on the veins. Eastern States, Florida.

B. steniptera *Hmps.* (24 k) has reddish-white forewings strewn with brown, with brown-striped veins *steniptera*, and internerval streaks at the margin, and the median on both sides shaded with a faded brown colour, this shade being continued obliquely to the apex; in the lower cell-angle there is a black dot and behind it the usual row of dots. Hindwing diaphanous white with yellowish veins and margin. Paraguay.

B. sarcostriga *Hmps.* (= *extincta* *Drc.* p. p.) (24 k) is larger than the preceding and darker, browner, *sarcostriga*, coarsely strewn with brown, with an ochreous-yellowish lighter part along the discal fold and from there obliquely upwards to the apex; below the median a faded, greyish-brown nebulous stripe and in the cell-end 2 dark brown dots; there are traces of black postmedian dots. Hindwing diaphanous white. From Mexico to Brazil. — **pallidior** *Strd.* is paler, in the cell-end only the lower dot and the end of the median are white. *pallidior*.

B. rhodoptera *Hmps.* (24 k). Forewing pink with a white costal margin and white veins edged with *rhodoptera*, a darker pink, below the cell a faded yellowish-white patch and a more distinct one along the discal fold to the margin and above it another narrower and shorter one; the usual postmedian row of black dots on the veins is bent. Hindwing diaphanous purely white. Colombia.

49. Genus: **Neleucania** *Sm.*

This genus is better known by the name of *Melina* which name, however, cannot be used here, because CURTIS, its author, has denoted *sociella*, the type of the genus, to be a *Galleriina*. Very closely allied to the preceding genus, from which it differs by a rounded slight frontal projection with a horny plate below it; all the rest rather similar, except the tibiae exhibiting longer hair.

N. rubripennis *G. & R.* (24 l) exhibits very much hair on both sides of all the three tibiae. Forewing *rubripennis*, ochreous-yellowish with broad purple pink longitudinal stripes, the broadest below the median, filling up half the submedian area as far as the margin, a wedge-shaped one behind the cell and one in the apical third of the costal margin. Hindwing yellowish. Texas.

N. atrifera *Hmps.* (24 l) like all the following species exhibits the tibiae covered with hair only *atrifera*, outside. Forewing yellowish white, strewn with brown, with a black basal ray; in the black and brown striped cell the maculae are marked as light spots; the apex is parted by a light patch before and behind which the cell-spaces are dusted with brown, with black internerval stripes therein; the veins in the marginal area are whitish. Hindwing yellowish-white, slightly dusted with brown, at the margin darker. Chile.

N. albilinea *Hbn.* (= *moderata* *Wkr.*, *harveyi* *Grt.*, *chilensis* *Btlr.*) (24 k). On the ochreous-yellowish *albilinea*, forewing the costal area is purple grey, the veins are striped brown; above the median a fine white stripe, below it a grey and brown one, with fine black stripes below its base and below the end; the long coniform macula is marked black, behind the centre of the transverse vein a black dot; on the margin there are small purple grey wedges, a very large one extends with its apex to the lower cell-angle. Hindwing yellowish-white, except the base smoky. — The form **diffusa** *Wkr.* has the purple grey colour more fadedly expanded across *diffusa*, the whole wing. — In **obscurior** *Sm.* on the hindwing only the veins and margin are smoky, and in **neptis** *Sm.* *obscurior*, only the veins are somewhat darkened. — f. **limitata** *Sm.* has entirely white hindwings and darker edged veins *neptis*, *limitata*, in the marginal area of the forewing. Canada to Argentina. — The larva is green with white, brown-edged longitudinal lines.

N. tetera *Sm.* is similar to *albilinea* (24 k), more ochreous-yellow, the costal-marginal area towards *tetera*, the apex tinted pink, and from the black discal dot a black stripe extends to the margin. Arizona.

- suffusa*. **N. suffusa** Schs. (24 k) is likewise quite similar, but all the purple grey parts are here blackish-brown and much more extensively dusted, the veins striped black, before and behind the transverse vein there are black dots. Hindwing of a pure white. Brazil.
- amoena*. **N. amoena** sp. n. (24 l) exhibits the same scheme of markings as *albilinea* (24 k), but the forewing is much narrower, more pointed, and shows a more oblique margin. The ground-colour is orange reddish, the costal area of the same colour, the broad nebulous stripes below the whitish median and below the discal fold are grey, the former with black, above white-edged stripes at the base (with a short continuation close behind the base towards the proximal margin) and below the cell-end, the latter obliquely extending at the margin upwards almost to the apex; the black discal dot is pupilled white towards the base, before the grey marginal area there is a row of black internerval dots, the two situate in the discal shade are white, in front and behind bordered with black. Hindwing of a pure white. 1 ♂ from the Songo (Bolivia), taken by FASSL.
- ferricola*. **N. ferricola** Sm. (24 l) also belongs yet to these species; forewing creamy yellow, dusted with a ferruginous red, the marginal area bluish-grey, with a distinct, light, undulate antemarginal line extending into the apex, the cellular and discal shade being brown, with the black discal dot therein; below the base of the median a black ray; the proximal-marginal area is shaded with brown, upwards defined by a black stripe on the submedian fold; before the undulate line there are brown, small, black-pupilled internerval spots. Hindwing light reddish. Expanse of wings: 28 mm. Described according to 1 ♂ from Arizona.
- stolata*. **N. stolata** Sm. (24 l). Forewing light yellow, the median and the two branches proceeding from the lower cell-angle are white, the former below broadly bordered with grey; of the same colour are a long marginal triangle extending to the black discal dot and a diffuse proximal-marginal spot. Hindwing of a pure white. Colorado, Arizona, Mexico.
- patricia*. **N. patricia** Grt. (24 l) exhibits the white median above shaded with a brownish grey; forewing ochreous-yellowish, the costal margin and veins being white, in the marginal half bordered with a darker colour. Hindwing in the ♂ smoky, in the ♀ white. Colorado and New Mexico.
- bicolorata*. **N. bicolorata** Grt. (24 m) is very well distinguished by the abdomen being particularly in the ♂ dark pinkish-brown, and by similar, in the ♀ lighter hindwings. Forewing ochreous yellowish with a whitish median and the veins somewhat bordered with pink; there are single black postmedian dots. Colorado to
- citronella*. Mexico. — f. **citronella** Sm. (24 m) does not exhibit the pink tinge on the forewing, and shows darker streaks in and behind the lower cell-end. Colorado.
- roseivena*. **N. roseivena** sp. n. (24 m) is a small delicate species of a pure creamy white, in the proximal part with single, small, black scales; all the species are broadly shaded with pink; a fine, postmedian row of black dots, on the margin very fine internerval dots. Hindwing of a pure white. 1 ♀ from Villavicencio (Eastern Colombia).
- rosea*. **N. rosea** Mschlr. (= *phragmitidicola* Wkr., *solita* Drc. p. p.) (24 m) is easily recognized by the pink flesh-colour; the median and veins whitish with a black dot in the lower cell-angle and a bent postmedian row. Hindwing white, the veins and margin brownish. Mexico to Guiana; in Cuba and Haiti.
- niveicosta*. **N. niveicosta** Sm. (24 m) has ferruginous-brown forewings, with a more reddish tinge in the cell and at the proximal margin, here scantily strewn with black, the costal margin white, the light veins edged with a somewhat darker colour, with a darker stripe in and behind the lower cell-angle; a postmedian row of black dots on the veins; fringes somewhat more pinkish. Hindwing brownish-grey, in the ♂ tinted pink with ochreous hair on single veins. Colorado.
- rubra*. **N. rubra** Hmps. (25 a). Forewing brownish-pink, strewn with black, on the folds striped lighter, the discal stripe turning round into the apex; costal margin whitish; in the lower cell-angle a black dot, behind it the usual bent row of dots on the veins. Hindwing diaphanous white, veins and margin tinted yellowish. Brazil.
- praegracilis*. **N. praegracilis** Grt. is more slender than the other species, with entirely unmarked yellowish-white forewings and white hindwings. Expanse of wings: 30 mm. Idaho, Colorado, New Mexico.

50. Genus: **Zosteropoda** Grt.

Exhibits only hair on the head and thorax without any admixture of scales and without tufts, neither are such tufts on the abdomen, which exhibits hair-tufts only laterally at the base. Frons smooth, middle and posterior tibiae on the outside with very long hair. The ♂ hindwing exhibits above hair on the veins except the lower radial branch and the subcostal branches.

- hirtipes*. **Z. hirtipes** Grt. (25 a). Forewing of a bright orange, strewn with red-brown, with red-brown transverse lines, the posterior of which forms an acute angle below the costal margin, between them a dark discal spot. Hindwing ochreous-yellowish, with brown hair. From California. — Larva yellowish-brown with a light dorsal line bordered with black spots, a light lateral stripe being in the centre filled up with reddish and especially on the posterior rings above bordered with dark.

Z. elevata *sp. n.* (25 a) is rather similar to the diagnose of the genus, but the hairing of the hindwing *elevata*. is not confined to single veins, but the whole disc is above and beneath covered with scanty long whitish hair; also the forewing exhibits in the cell and at the base of the costal margin beneath longitudinally placed hair; like many species of *Eriopyga*. Forewing pinkish-brown, on the veins and costal margin strewn with a bluish white, in the discal area bordered by the darker distinct transverse lines chestnut-brown, the postmedian line running almost like in *hirtipes*, the anterior transverse line forms a uniform, towards the margin convex bow; both the upper maculae are somewhat darker, strewn with bluish and encircled with dark brown, the ring-macula pear-shaped, the reniform macula on the median somewhat produced towards the base; in the subapical costal-marginal part single, purple brown, coarse scales; the undulate line is somewhat marked by darker diffuse spots. Hindwing yellowish, at the margin broadly smoky, 1 ♂ from Mt. Tolima (Colombia).

51. Genus: **Leucania** O.

Very closely approximating the genus *Borolia* from which it only differs by the thorax exhibiting pure hair without any scales; all the rest is the same.

L. rubripallens *Sm.* (25 a) has light reddish wings with reddish-brown, darker brown edged veins *rubripallens*. and interval stripes, and 2 black postmedian dots. Hindwing brownish-grey with white fringes. Canada; Colorado.

L. yuconensis *Hmps.* is a very dark species, on the forewing wood-coloured brown, strewn darker, *yuconensis*. with whitish-striped veins, and in the marginal area with dark interval stripes; at the cell-end a black dot and two postmedian ones. Hindwing brownish black with light fringes. Expanse of wings: 32 mm. Canada (Yukon).

L. oxygala *Grt.* (25 a). Forewing light brownish ochreous with whitish, brown-striped veins and *oxygala*. brown interval stripes, in the lower cell-angle with a black dot. Hindwing brownish-grey with white fringes. Colorado.[†]

L. suavis *B. & McD.* (25 a, b) is on the forewing straw-coloured, scantily strewn with black parti- *suavis*. cularly along the proximal margin; above the median and the middle radial branch with a dark nebulous stripe as far as the margin; the veins of the marginal area are on both sides very finely bordered with a dark colour, but there are no interval streaks, whereby the species is easily separated from all the others. Hindwing in the ♀ smoke-grey, in the ♂ darker with light fringes. Arizona.

L. minorata *Sm.* (25 b). Forewing ochreous-yellowish with an olive tint, the veins edged with red- *minorata*. brown, and with interval streaks; below the median very feebly shaded, sometimes also at the proximal margin and along the median branches; in the lower cell-angle there is a black dot, and there are 2 postmedian ones, occasionally with traces of a line between them. Hindwing light brown. Canada to California.

L. luteopallens *Sm.* (25 b) is the American form of our palearctic *pallens* and hardly different in the *luteopallens*. exterior. Canada to California.

L. pertracta *Morr.* is extremely similar to the preceding, of a somewhat more intense ochreous yellow *pertracta*. with more distinctly white, dark-edged veins; the postmedian row of dots on the veins is better developed. Hindwing entirely white. New York.

L. impuncta *Gn.* (= *decolorata* *Blch.*) (25 b) has ochreous yellowish forewings with whitish, light *impuncta*. brown striped veins and light brown interval lines. Hindwing diaphanous white, on the veins and margin yellowish brownish-grey. From Chile.

L. phaeoneura *Hmps.* Forewing light reddish-brown, the veins and the basal half of the submedian *phaeoneura*. fold are striped darker, the upper and lower radial branches and the upper median branch are edged with white; a postmedian row of dots on the veins is oblique. Hindwing lustrous red-brown with yellowish fringes. Expanse of wings: 34 mm. Peru (Acopampa).

L. niveilinea *Schs.* (25 b). Forewing golden reddish-yellow with a silvery white subcostal stripe, a *niveilinea*. stripe in the centre of the median and at the base of the lower median branch which meets a similar oblique subapical stripe from which short stripes extend on the median branches and the two lower radial branches. Hindwing light brown. Mexico.

52. Genus: **Faronta** *Sm.*

Separated from *Leucania* by the squat convex thorax, longer abdomen and narrow long wings. The frons exhibits a rough rounded projection, but no horny plate below it. Only one species was described:

F. aleada *Sm.* has yellowish-white forewings, the disc dusted with a somewhat lead-coloured grey, *aleada*. with a white median, upper median branch and lower radial branch; towards the apex the veins are striped slightly darker; no dark dots. Hindwing in both sexes white. Expanse of wings: 32 to 35 mm. From Texas.

Subordinate Family: **Cucullianae.**

This not very polytypical group is sharply characterized by bare eyes surrounded by more or less long ciliary hairs and by the absence of spines and spikes on the middle and posterior tibiae. They are mostly medium-sized insects, the most typical representatives of which, the genuine *Cucullia*, are distinguished by a hooded and keeled collar, with the same exterior as the palearctic representatives, without any strangely looking types at all in this subfamily. They are chiefly distributed in Northern America, the tropical regions being inhabited by but very few forms.

1. Genus: **Neogalea** *Hmps.*

Characterized by the thorax being purely clad with scales, without any hair, by the tufted abdomen, a slight, rough frontal projection and spineless anterior tibiae. The collar is like in the following genera hooded, with a middle keel. Only 1 species:

braziliensis. **N. braziliensis** *Hmps.* (25 c) is a grey insect more or less dusted and strewn with brown, with somewhat darker striped veins, a dentate double posterior transverse line and dark internerval stripes in the marginal area. Hindwing diaphanous white with a brownish costal margin and marginal area. From Rio de Janeiro.

2. Genus: **Copicucullia** *Sm.*

Separated from the genuine *Cucullia* by a bent, claw-like spine inside on the anterior tibiae; besides there is a horny plate below the rough frontal projection; the prothorax and metathorax exhibit feeble tufts. All the rest as in *Cucullia*. About a dozen species are known from America. Beside the American *Copicucullia* one more species is known from Algeria and the Canary Islands (cf. Vol. III, t. 29 a), and 2 Asiatic species; in the Indo-Australian region and Ethiopian Africa they seem to be entirely absent.

antipoda. **C. antipoda** *Streck.* (25 c). Forewing greyish-white with a slight violet tint and brown strewing and very sharply dentate transverse lines, the posterior line forming a sharp W towards the proximal angle; all the three maculae are present; between the veins there are faded darker stripes towards the margin; the undulate line is composed of single small sagittae. Hindwing white, on the veins and margin brownish. Canada to Arizona.

propinqua. **C. propinqua** *Sm.* (25 c) is mostly larger, with broader wings, of a more intense bluish-grey, with somewhat darker hindwings, on the veins and folds finely striped black; the anterior transverse line is less distinct. Colorado, Durango.

incresa. **C. incresa** *Sm.* Forewing ashy grey, in the ♂ more bluish-grey, in the ♀ of a more brownish tint, with finely black-striped veins and quite extinct transverse lines, and a bent dark patch above the anal angle; the ring-macula and reniform macula are small but distinct, the former with a yellowish ring, the latter dusted with yellowish and brown. Hindwing in the ♂ of a pure white with dark marginal lunae, in the ♀ smoke-brown with white fringes. Expanse of wings: 37 to 40 mm. California.

eulepis. **C. eulepis** *Grt.* as well as the following have no maculae; forewing whitish grey, towards the base still lighter, with indistinct transverse lines being connected at the proximal margin by a black streak; from the posterior transverse line, which is double at the costal margin and proximal margin, a black stripe extends on the lower median branch to the margin, above the upper one there is besides a blackish wedge. Hindwing blackish-brown with white fringes. Expanse of wings: 35 mm. Oregon, California. — Whether **bistriga** *Sm.* from Colorado is merely a synonym, appears to be doubtful, it is darker, the dark streak on the submedian fold is connected with the basal ray as a long black line.

cucullioides. **C. cucullioides** *B. & Benj.* Habitus and genital organ very much like the preceding, but the spine of the anterior tibia is but very stunted. A smaller species, with very light, whitish, black-strewn forewings and, except a black marginal line, quite extinct markings; the basal ray is very fine and feeble, a somewhat stronger one on the submedian fold extends from the traceable tooth of the anterior transverse line to the margin; apex parted by a grey patch. Hindwing white, with brownish veins and margin. Expanse of wings: 28 to 31 mm. Utah, Arizona, California.

heinrichi. **C. heinrichi** *B. & Benj.* on the whole resembles *incresa*, but it is lighter, with somewhat more distinct transverse lines and entirely without the two maculae; the anal streak and the shading of the proximal margin is less distinct; the posterior transverse line is extended into such long points as in no other American species. Hindwing white. Expanse of wings: 39 mm. Arizona.

C. astigma Sm. (25 d) is a large species with greyish-white forewings strewn with brown, the veins *astigma*. finely striped black, a long black streak on the submedian fold from the base to the margin and a black stripe at the proximal margin from before the middle to the proximal angle; transverse lines and maculae are entirely absent. Hindwing light brownish. Colorado.

C. jemezensis Dyar is similar to *astigma* (25 d), smaller, much darker grey, the fine black veins *jemezensis*. on both sides bordered with a lighter grey; the proximal-marginal line is finer, the anal-angular streak thicker. Hindwing dark grey with darker veins. Expanse of wings: 42 mm. New Mexico, taken in May.

C. luteodisca Sm. (25 d) is easily recognizable by the light yellowish tinge below the cell between *luteodisca*. the transverse lines, which contrasts with the otherwise bluish-grey forewing. Similarly marked as *antipoda* which it resembles particularly in the distinctly defined maculae, which are sometimes pupilled yellowish. Hindwing white with a broad brownish-grey margin. Expanse of wings: 41 mm. New Mexico.

C. basipuncta B. & McD. (25 e) is a small, sharply marked species, bluish-grey with black-striped *basipuncta*. veins, a distinct black basal dot at the costal margin; the large maculae are situate in a dark costal-marginal shade, with a white square stripe on the submedian fold below it; the interrupted transverse lines are dentate, above the anal angle a triangular spot. Hindwing white. California.

3. Genus: **Cucullia** Schrk.

The *Cucullia* form a large, well-known genus of very similarly looking insects with long, narrow forewings and a distinct hood at the collar, which may be erected and put down at will. The frons exhibits a slight, rough projection, the thorax is clad with hair-like scales intermixed with hair, the metathorax exhibits a double tuft, the abdomen on the first rings distinct small tufts. Of late the genera *Lathosea* Grt. and *Rancora* Sm. have yet been included as subordinate genera: in the former the eyes are ciliated to a very extreme degree and the hairing is very rough, in the latter the eyes are less strongly ciliated, and invariably there is a thick black spot on the transverse vein of the hindwing beneath, being connected with the base by a thick black streak; also in *Lathosea* this spot, recalling secondary sexual characters in the *Phycitinae*, is more or less developed. *Rancora* has besides strongly serrate antennae in the male sex, the thoracal hairing is smoother. Quite recently another genus: *Supralathosea* B. & Benj. has been established, chiefly distinguished by the ♂ showing the antennae long-combed as far as the tips, the thorax being only covered with scales, and by exhibiting only one small tuft on the first abdominal ring.

The *Cucullia* mostly inhabit the temperate latitudes of the northern hemisphere, particularly Europe, North Asia, and North America. In India they are rather scarce, mostly in the northern parts bordering on the palearctic region (cf. Vol. XI, p. 106). From Australia there are no species known to us, but some species occur in South Africa. — A peculiar fact is the monophagy of the larvae of many species living only on a quite certain species of plants to which their exterior may then be adapted to a marvellous degree. The other arvae are often very variegated with motley markings. Cf. Vol. III, p. 102.

Sect. I. ♂ antennae long-combed (*Supralathosea* B. & Benj.)

C. baboquivariensis B. & Benj. is of a monotonous dull grey, dusted and strewn with white, all *baboquivariensis*. the markings almost extinct, the fringes feebly speckled blackish. Hindwing of a pure white with a faint discal spot and darker strewing in the costal-marginal area, on the veins and at the distal margin. Expanse of wings: 31 to 34 mm. Arizona.

Sect. II. ♂ antennae short-combed, at the base and end serrate (*Lathosea* Grt.).

C. pulla Grt. (= *pullata* Grt.) (25 f). Forewing blackish-brown, thickly strewn with whitish, with *pulla*. black veins and a black basal ray finely bordered with white, with sharply dentate transverse lines edged with whitish, and a narrow reniform macula being produced on the median towards the base. Hindwing blackish-brown with white fringes. Oregon.

C. spauldingi B. & Benj. is very closely allied to the preceding and has the same size and shape, *spauldingi*. but it is darker, without any brownish admixture, the hindwings being also blackish-grey. The marking is altogether more distinct. Utah, in April.

Sect. III. ♂ antennae serrate. (*Rancora* Sm.).

C. ketchikana B. & Benj., owing to the almost combed antennae and the very strong transverse *ketchikana*. lines, forms a transition in the exterior to *Lathosea*, but the softer thoracal covering and the intense discal spot with the basal stripe on the hindwing beneath assign it to *Rancora*. Exterior most similar to *brucei* (25 c).

Forewing whitish-grey mixed with black; the black basal ray is almost continuous to the anal angle; between the two strongly dentate transverse lines a black inner-marginal streak, in the marginal area black internerval sagittae. Hindwing blackish-brown with white fringes. From Alaska (Ketchikan), taken in April.

strigata. **C. strigata** Sm. (25 e). Forewing purple-grey, dusted with blackish-brown, with indistinct, interruptedly dentate transverse stripes and very small indistinct maculae, the oblong ring-macula connected by streaks with the anterior transverse line, behind the reniform macula a small black luna; marginal area striped black. Hindwing blackish-brown, on the veins and margin darker; mesothorax black, shoulder-covers bordered with black. Canada, United States.

serraticornis. **C. serraticornis** Lintn. (25 f) is somewhat lighter, more distinctly marked, the anterior transverse line double, a distinct black streak on a whitish stripe-shaped spot extends to the anal angle. Hindwing lighter, almost white, on the veins and margins brownish; mesothorax brown, shoulder-covers edged with brown. California.

matricaria. **C. matricaria** Streck., described according to a manuscript by BEHR, in its exterior entirely resembles *serraticornis* (25 f) and may be a synonym of it. It only differs by somewhat more distinct anterior and posterior transverse lines. California. The type is in the Field Museum, Chicago.

brucei. **C. brucei** Sm. (25 e). Forewing purple grey, dusted and strewn with dark brown, with a black basal ray, dentate transverse lines, the posterior line only distinct in the proximal-marginal area and with black marginal streaks; the small maculae are very faintly marked. Hindwing light brownish grey. Colorado.

solidaginis. **C. solidaginis** Behr (25 e) as well as the following has somewhat less strongly serrate antennae. Forewing purple grey, dusted with brown, with black veins and basal ray; anterior transverse line strongly dentate, the posterior line only distinct at the proximal margin; instead of the maculae 2 black longitudinal streaks in the cell-end, similar ones in the marginal area. Hindwing brown with white fringes. Canada to California.

albicinerea. **C. albicinerea** Sm. (25 e) is of a purer bluish-grey than the similar preceding species; the marking is almost the same, the fringes of the forewing are somewhat more distinctly speckled, the hindwing somewhat lighter. Canada, Colorado.

Seet. IV. ♂ antennae plain (*Cucullia* Schrk.).

albida. **C. albida** Sm. (25 f) in the marking resembles the two last species, but it is smaller and has an almost white ground-colour with a slight yellowish tinge; the transverse lines are quite extinct, only the basal and marginal rays are more distinct. Hindwing light greyish-brown with darker veins. From Colorado.

eucaena. **C. eucaena** Dyar (25 e) is a very dark species, blackish-grey, in the costal area, in and behind the cell and subanally tinted red-brown; the round maculae are yellowish without distinct border-lines, only below the reniform macula a black bow, pupilled with black and brown dots; only the sharply dentate anterior transverse line is more distinct; the tooth on the submedian fold is closed. The veins of the marginal area are finely striped black, the lower median vein thicker; a whitish undulate line is only distinct in the proximal-marginal third. Hindwing light, veins and marginal area blackened. Fringes white. Mexico (City).

syggnomon. **C. syggnomon** Dyar (25 d) is somewhat like the preceding, larger, dark purple grey, at the costal margin with oblique whitish patches, in and behind the cell-end, subanally and at the base of the proximal margin tinted red-brown; the large maculae like in *eucaena*, but their bordering like in *dentilinea* marked by black dots; the tooth of the anterior transverse line is widely open on the submedian fold; the distal transverse line is marked by whitish. Hindwing brown, on the veins and margin broadly blackish, the fringes at the base brown and only distally white. Expanse of wings: 53 mm. Mexico (Orizaba).

dentilinea. **C. dentilinea** Sm. (25 g). Forewing greyish-white, densely dusted blackish-brown, with black veins and basal ray; the anterior strongly dentate transverse line is double like the posterior line in the proximal-marginal part; the bordering of the maculae is marked above by black dots, below by short streaks; in the marginal area black internerval streaks and subanally a thick patch parted by whitish. Hindwing whitish, on the veins and marginal area dusted with brownish. From Colorado and Arizona. — In Mexico flies a form with maculae exhibiting an intense ferruginous yellow tinge: **mexicana** form. nov., but there also occur specimens without or almost without any yellow.

emungens. **C. emungens** sp. n. (25 f) is very similar to the preceding species, of a purer bluish grey, with somewhat finer markings and without the yellow filling of the maculae; particularly the anal streak, which is not parted by whitish, is much finer and also longer, more linear and not so spotted. The species is at once discernible by quite dark brown hindwings with white fringes. From Mexico (City and Zacualpan).

dorsalis. **C. dorsalis** Sm. (25 g) is on the whitish-grey forewing dusted with blackish-brown and on the veins finely striped black, a basal ray and the very pointedly dentate transverse lines are very fine black; no maculae except an arcuate streak below the reniform macula. Hindwing whitish, on the veins and margin brownish. Colorado to Mexico.

eccissica. **C. eccissica** Dyar (25 g) is very similar to *dorsalis*, on an average smaller, of a purer and clearer bluish grey, with still finer markings which are for the greatest part quite extinct; a fine black basal ray extends

to the distal fifth of the submedian fold, which it then leaves running in a very slightly S-shaped curve to the end of the lower median branch. Hindwing white with darker veins and a narrow dark grey margin. Mexico (Tehuacan, Puebla).

C. alfarata *Streck.* (= *phila Sm.*). Forewing light grey with a black basal ray as far as the strongly *alfarata*. dentate antemedian line; maculae absent; the posterior transverse line is more distinct only near the proximal margin from where the usual black submedian ray extends to the anal angle; the costal-marginal area is somewhat darkened with an oblique subapical shade. Hindwing white with a brown marginal band. Expanse of wings: 40 mm. From Florida, Carolina, Tennessee, Missouri, and Virginia. — The larva is light green, on the ventrum somewhat darker, with a broad orange-red dorsal stripe, subdorsally broad black with narrow continuations before and behind the stigmata downward; below them with a broad, orange-red, somewhat undulate substigmatal line. It lives on wild asters in September and October; imago only in August.

C. speyeri *Lintn.* (25 g) is similar to *dorsalis*, somewhat smaller, darker purple grey with a brownish *speyeri*. tint, the lower bordering of the maculae represented by slight arcuate streaks; the posterior transverse line is only distinct towards the proximal margin, and on the submedian fold bipartite with pointed ends, before them here mostly with a whitish spot; in a brownish apical patch there are whitish streaks; in the marginal area single internerval streaks and the usual black stripe at the end of the submedian fold. Hindwing white, on the veins and margin brownish. From Canada to New York, Illinois, Montana.

C. laetifica *Lintn.* (= *cita Grt.*, *hartmanni French*) (25 f) is extremely similar to *speyeri*, mostly *laetifica*. somewhat smaller, and distinguished by the posterior transverse stripe forming on the submedian fold only one, rather rounded projection instead of the 2 pointed teeth of *speyeri*. Texas; Arizona. — The larva is very similar to that of *alfarata*, yellowish-green with red dorsal and sublateral stripes, a broad black subdorsal band and with irregularly interrupted black rings; ventrum and feet spotted black. It lives on Compositae.

C. costaricensis *Hmps.* (= *edificans Dyar*). Forewing light grey, costally, in and behind the cell tinted *costaricensis*. red-brown, the submedian tooth of the anterior transverse line widely open; instead of the maculae there are only 3 black dots along the discal fold in the cell; at the costal margin 2 blackish nebulous patches; apex blackish; the distal transverse line is distinct, whitish, towards the proximal margin bordered with black, behind it subanally the usual black strigiform spot. Hindwing light grey with blackish-brown veins and distal margin. Expanse of wings: 46 mm. Costa Rica (Cachi).

C. buddhae *Wkr.* (= *phocylides Drc. part.*) (25 h) is somewhat like *dentilinea* (25 g), but much *buddhae*. more brownish in the colour and without the black dots of the macular bordering, only with an arcuate streak below the reniform macula; instead of the undulate line there are small black sagittae, subanally 2 thick, black spots separated by whitish. Hindwing brownish, with darker veins and margin. Mexico; Costa Rica; Venezuela.

C. minor *B. & McD.* (25 h) is a small dark grey species, with almost quite extinct, indistinct *minor*. double transverse lines, the anterior line submedianly very pointedly dentate, the posterior line only marked at the proximal margin; the maculae are finely surrounded by black, the reniform macula pupilled with a small brownish luna; the dark anal spot is parted by an undulate light line. Hindwing of a pure white with a fine dark marginal line. New Mexico.

C. obtusa *Sm.* is very conspicuous by the short, broad shape of the wings. The grey forewing with *obtusa*. a yellowish tint in the cell, without maculae, the anterior transverse line only marked by dots on the veins, the whitish undulate line distally defined by small brownish internerval spots. Hindwing yellowish-white with a blackish margin. Expanse of wings: 38 to 41 mm. Arizona.

C. tucumani *Hmps.* is one of the smallest species, bluish-grey dusted with brown, especially at *tucumani*. the costal margin; the anterior transverse line is indistinct with 2 black dots at the proximal margin; the maculae are whitish, brown-pupilled diffuse spots with a brown oblique line from the lower cell-angle to the proximal margin; the posterior transverse line is brown, in the lower half composed of double dots parted by white; instead of the undulate line there are grey sagittae anteriorly bordered with brown, distally with black. Hindwing white with a broad blackish-brown marginal band. Expanse of wings: 28 mm. Argentina.

C. peruensis *Dogn.* is still smaller than *tucumani*, whitish-grey, particularly towards the base strewn *peruensis*. with white, without any maculae, towards the margin between the veins blackened with small whitish undulate linear spots which are in front and behind bordered with a darker colour and extend obliquely to the apex; the veins of the marginal area are fine black. Hindwing diaphanous whitish, the veins and margin blackish. Expanse of wings: 25 mm. Peru (Trujillo).

C. nanuscula *Dyar* has stone-coloured grey wings without transverse lines and maculae with a long, *nanuscula*. fine basal ray, also the distal end of the median and its lower branches being finely striped black; costal

margin with irregular, small, blackish nebulous spots; behind the whitish undulate line black dots. Hindwing of a pure white. Expanse of wings: 32 mm. Described from New Mexico *).

- phocylides*. **C. phocylides** Drc. (25 i). The grey forewing is very much dusted with red-brown, with rather indistinct transverse lines, a fine black basal ray and small red-brown internerval spots in the marginal area and a larger subanal one, as well as a black streak at the end of the proximal margin. The brownish hindwing is on the veins and margin darker. Mexico.
- intermedia*. **C. intermedia** Speyer (25 h) is very similar to the palearctic *lucifuga* (vol. III, t. 27 d) from which it chiefly differs by the entirely white fringes of the hindwings. Forewings purple grey, dusted with brownish, with finely dark-striped veins and basal ray, very strongly dentate transverse lines and single internerval rays in the marginal area. Hindwing brown, at the margin somewhat darker. Canada to the Central States. — The larva likewise resembles that of *lucifuga* and is black with orange lateral spots.
- cinderella*. **C. cinderella** Sm. (25 i) is very similar to *intermedia*, but the lower bordering of the maculae is marked by fine black arcuate streaks, the hindwing is somewhat lighter, and the mesothorax is grey in *intermedia* brown. Canada, Colorado.
- montanae*. **C. montanae** Grt. (25 i) already forms the transition to the following species by the forewing being intensely hued with ferruginous reddish in the costal part and at the anal angle; at the proximal margin there is a dark longitudinal stripe, the ring-macula is of an elliptic shape, both the maculae are large and distinct, in the centre strangulated, the posterior transverse line forms analwards a small whitish crescent on both sides bordered with blackish-brown; subterminally there are brownish-red internerval stripes, at the anal angle a much stronger one. Hindwing white, on the veins and margin brownish. Canada to Colorado.
- floreae*. **C. florea** Guén. (= *indicta* Sm.) (25 g) is marked similarly to *montanae*, but on the whole very much darker and blacker, without or with but very little reddish-brown tints in the costal half, particularly the basal area is much darker, the anterior transverse line is more distinct, dentate and double. The hindwing is likewise much darker, greyish-brown, at the margin darker. Canada to New York and New Jersey. — **obscurior** Sm. (25 h) is a still darker form from Colorado, in which the maculae are only marked by black borders round dots.
- lilacina*. **C. lilacina** Schs. (= *agua* Barnes) (25 h) is presumably the most variegated species, the forewing of a clear and light bluish-grey with a lilac tinge, in the apical half of the costal-marginal part inclusive of the reniform macula of a light ferruginous red, before the latter a blackish-brown nebulous spot; at the proximal margin there is a thick black stripe, above the anal angle a similar one. Hindwing quite light brownish, on the margin and veins darker. Arizona and Mexico.
- omissa*. **C. omissa** Dod. is very closely allied to the two following, still darker than *asteroides* (25 k); with darker hindwings in both sexes, the violet tint in the grey colour being entirely absent, the maculae being much more indistinct and almost quite extinct in the ferruginous cellular shade; the dark proximal-marginal stripe is mostly more distinctly pronounced. The hindwing is throughout dark blackish brown. The species resembles the most the palearctic *asteris* (vol. III, t. 27 e) which it also approximates the most in the sexual organ which differs from *postera* and *asteroides*. From Canada (Alberta).
- postera*. **C. postera** Gn. (25 i) has purple grey forewings being darker at the costal margin, with a red-brown tinge in and behind the cell; the anterior transverse line is double, the maculae pupilled brownish, in the centre somewhat strangulated, their bordering more or less broken up into dots, otherwise rather much like *floreae*, the black anal streak extends to the posterior transverse line. The brownish hindwing is darker on the veins and margin. United States, New Hampshire, New York, New Jersey.
- asteroides*. **C. asteroides** Gn. (25 k) is very similar to *montanae* (25 i), but it is lighter and the maculae are in their surroundings only marked by dots, below the reniform macula there is a fine black arcuate streak. Hindwing white, on the veins and margin brownish, in the ♀ darker. Canada, United States to New York and Illinois. — The green larva with yellow longitudinal lines bordered with black probably lives on aster-like compositae.
- similaris*. **C. similaris** Sm. (25 k) is likewise similar, but in the discal area scarcely tinted yellowish, more bluish-grey, with fine black veins, easily recognizable by black dots also in the maculae outside their punctiform bordering. The white hindwing is dusted with brownish, on the margin and veins darker. Colorado, Durango.
- convexipennis*. **C. convexipennis** Grt. & R. (25 k) and the two following species are extraordinarily much alike. The forewing is in all three violettish-grey, in the discal area from the centre of the costal margin through the cell as far as the margin ochreous-yellowish, in the apical half of the costal margin and at the proximal margin analwards more tinted ferruginous-brownish, the fine, strongly dentate transverse lines rather indistinct, the posterior line at the costal margin double and filled up by a long whitish patch which extends to the margin; the maculae are marked by single black dots. In *convexipennis* the abdominal tufts are extremely

*) This species (*nanuscula*) is to be eliminated, as it has proved to be a synonym of *Catabena pronuba* B. & McD, which will be dealt with later on.

large and red-brown. Hindwing yellowish-white, at the margin and veins reddish-brown. Canada, United States to Ohio. — Larva black with a red dorsal line, numerous yellow longitudinal lines and a broad yellow lateral stripe divided on each ring into 4 spots by black vertical lines.

C. oribac *B.* (25 k) resembles the preceding, but the maculae are altogether absent, the black proximal-marginal stripe is fainter, the small light postmedian luna at the proximal margin S-shaped and more oblique, the hindwing darker. Arizona.

C. arizona *Sm.* (= *strigata* *Schs.*, *perstrigata* *Hmps.*) (25 i) has generally darker bluish-grey forewings, particularly before the centre with a very distinct dark longitudinal stripe above the median, continued almost to the margin, the maculae marked by 2 or 3 thick black dots. The light brownish hindwing is darker on the margin and veins. The abdominal tufts are small and black. Arizona, Mexico.

C. perlucida *Jones* is a very light species with a rounded apex. Forewing yellowish-white, in the submedian space almost transparent white, particularly at the costal and proximal margins dusted with brownish, with black, fine, strongly dentate transverse lines, without maculae; the proximal margin and distal margin are narrow blackish; the usual subanal black oblique stripe, before it from the centre of the proximal margin almost to the centre of the lower median branch there extends a faded black stripe. Hindwing white, veins and margin light brown. Expanse of wings: 45 mm. Described from Brazil: Castro (Paraná).

4. Genus: **Nycterophaeta** *Sm.*

Distinguished from *Cucullia* by the thorax being only clad with hair, the abdomen being without any tuft, and a horny plate below the round frontal projection. The anterior tibiae exhibit at the ends inside a strong claw-like spine and outside a feebler one. Only 1 species:

N. luna *Morr.* (= *magdalena* *Hulst.*, *notatella* *Grt.*) (25 k) is a uni-coloured silvery white species, only the abdomen is occasionally hued with brownish. The forewing exhibits single black dots in the cell, at the costal, proximal and distal margins. Widely distributed in the United States.

5. Genus: **Opsigalea** *Hmps.*

Distinguished by the thorax being chiefly covered with scales, the collar being only slightly hooded, the abdomen tuftless, and a triangular tuft on the metathorax. The frons exhibits a slight rounded projection, the tibiae are without claws. But 1 species:

O. ocellata *Wkr.* (26 a) is a very easily recognized species not to be mixed up with any other owing to its ochreous-whitish forewing with a grey proximal-marginal part and the large black ocellus-shaped spot at the anal angle. Only from Mexico.

6. Genus: **Empusada** *Hmps.*

Distinguished from the preceding by a small horny plate below the frontal projection, the thorax being chiefly clad with hair, without a tuft on the metathorax. Abdomen likewise tuftless. Several African and eastern species. Only one American:

E. argyrina *Gn.* (26 a). Forewing reddish-brown, in the proximal part white with a silvery white longitudinal band through the cell as far as into the apex. Hindwing white with a narrow brownish margin in both sexes. South Brazil, Argentina, Uruguay. — The form **pura** *Btlr.* is also in the proximal part of the forewing brownish, and the hindwing of the ♀ is quite brownish. From Chile.

7. Genus: **Callierges** *Hbn.*

Proboscis developed, the smooth frons exhibits 2 transverse fillets of hair; the thorax is clad with hair and hair-like scales; the collar shows a slight middle keel, the prothorax and metathorax loose tufts, the abdomen on the first rings large tufts. Beside the palaearctic *C. ramosa* (vol. III, t. 24 d) 2 South American species have been described:

C. peruviana *Hmps.* Forewing bluish-grey, strewn with brown and black, the brown discal area obliquely extending to the apex, with a black basal ray; the large coniform macula is encircled with black, the upper maculae grey, strewn with brown and encircled with black, except the upper end, behind them a dentate black transverse line; undulate line in the upper half marked by a dark shade, below it by an oblique black streak. Hindwing white, at the margin brownish with black veins and discal spot. Expanse of wings: 34 mm. Peru.

tropicalis. **C. tropicalis** *Schs.* exhibits ochreous-brownish forewings being light grey at the costal margin and postmedially, with light stripes in and below the cell, the part of the reniform macula being more reddish-grey with a red-brown discal streak; in the grey postmedian area a row of dark dots on the veins, behind them whitish, diffuse internerval patches followed by small brown marginal stripes, the longest extending to the reniform macula; anal part darker brown, strewn with white, the undulate brown fringes crossed by white. Hindwing white, distally dark, the veins partly black. Expanse of wings: 35 mm. Costa Rica.

8. Genus: **Pseudanthoecia** *Sm.*

This genus, being composed of but one small species, is characterized by small eyes, a bent horny plate below the frons, the body being coarsely haired without any admixture of scales, without tufts on the thorax and abdomen, the latter at the base and laterally with long rough hair.

tumida. **P. tumida** *Grt.* (26 a) has light ochreous forewings tinted olive, in some places dusted with blackish, the maculae and transverse lines only indistinctly pronounced, in the lower end of the reniform macula some black scales, the undulate line marked by a somewhat lighter band, the ends of the fringes speckled light and dark. The orange-yellow hindwing exhibits a broad black marginal band proximally defined by a black median line. Colorado, New Mexico.

9. Genus: **Euros** *Edw.*

Very closely allied to the preceding, distinguished by still smaller somewhat elliptical eyes, shorter palpi and loose tufts on the prothorax and metathorax as well as on the first abdominal rings. 2 small North American species, which may prove to be merely the forms of one species.

proprius. **E. proprius** *Edw.* (26 a) is in the basal area and in the proximal half of the subterminal space olive-yellowish, otherwise pinkish-red, strewn with black, with torn dark red-brown markings bordered with whitish; between the maculae with red-brown pupils and encircled with yellowish-white there is a blackish median line. Hindwing blackish-brown with pinkish-red fringes. California.

cervina. **E. cervina** *Edw.* (26 a) is extraordinarily similar to *proprius*, the markings are somewhat more coherent with more distinct transverse lines, the discal area somewhat darker, particularly darkened in the marginal area behind the whitish undulate line. Perhaps only a form of the preceding, and likewise described from California.

10. Genus: **Criophasia** *Hmps.*

Proboscis developed, frons with a stunted conical projection; eyes large, round; thorax clad with scales, collar with a slight keel, metathorax and first abdominal ring with one tuft each. Beside an African species, only one species from the southernmost parts of America has become known.

cauquenensis. **C. cauquenensis** *Btlr.* (26 a) has brownish-grey forewings, in the marginal area darker with veins, without transverse lines and maculae, with 2 dark arcuate lines filled up with whitish in the discal area above the proximal margin, and 3 brownish-black small wedges in the anal half of the distal margin. Hindwing light, at the margin somewhat darker. Chile.

11. Genus: **Leucochlaena** *Hmps.*

Proboscis stunted, prothorax and metathorax with small loose tufts. The ♂ antennae are long-combed, all the rest is rather similar to *Calophasia*, except the slight keel on the collar being absent. The ♀♀ of the only American species exhibit some anal wool on the abdomen. Besides there are palearctic and African species known.

hipparis. **L. hipparis** *Drc.* (26 b). Forewing brownish-grey with double, dentate transverse lines filled up with ochreous whitish, small, dark-pupilled, light-ringed and black encircled maculae; undulate line blackish, dentate, the marginal area behind it mostly lighter. Hindwing ochreous-brownish with a darker marginal line. The darker ♀ exhibits a dense tuft of brownish-white anal wool. From Mexico, of late also reported from Arizona.

pallens. — From January till March there fly very light small specimens: **pallens** *form. nov.* (26 b), from May till

colossa. November two or three times as large specimens of a much darker colour: **colossa** *form. nov.* (26 a, b).

12. Genus: **Andesia** *Hmps.*

Allied to the preceding genus, but it has a well developed proboscis and the thorax chiefly covered with scales; the ♂ antennae are plain, the abdomen shows a tuft on the first ring. But 1 species:

A. oenistis *Hmps.* (26 b). Forewing ochreous-brownish, the discal and marginal areas dusted with *oenistis*. blackish, with a black basal ray, double, very much bent transverse lines and small maculae in ochreous-yellowish rings, in the marginal area with ochreous-yellowish and black sagittae; fringes ochreous, speckled with blackish. The brown hindwing is darker at the margin. Argentine Andes.

13. Genus: **Walterella** *Dyar.*

Collar smooth, without a keel; frons with a stunted conical projection with a relieved margin, the upper end extended into a long point, the lower margin three-pronged. Eyes comparatively small, strongly ciliated, tarsi unarmed, legs and thorax long-haired, intermixed with long, three-pronged scales, metathorax and 3rd abdominal ring with small tufts; ♂ antennae plain, ciliated. But 1 species:

W. ocellata *B. & McD.* (= *eudesmia* *Dyar*) (26 b). Forewing narrow; grey, in the basal area *ocellata*. lighter, transverse lines feebly double, the anterior line rectangularly angled, the posterior line dentate, behind it an olive-brown band being broad at the anal angle and obliquely extending to the apex; in the dark, blackish discal area the maculae are doubly surrounded with black, the coniform macula is long. Hindwing brownish-grey. Arizona.

14. Genus: **Lepipolys** *Gn.*

This genus and the large following genus are very much alike, the only difference is the rougher frons which may form a conical projection in some specimens. Two species from the United States.

L. behrensi *Grt.* (26 b). Light greyish-brown, strewn with black, with double transverse lines, black-*behrensi*. encircled and somewhat brownish-pupilled maculae with traces of a median line between both; before the yellowish-white undulate line black internerval streaks. Hindwing light brownish, the veins and margin darker. ♂ antennae serrate. California.

L. perscripta *Gn.* (26 b) is more slender and on an average larger than *behrensi*, the ♂ with plainly *perscripta*. ciliated antennae, otherwise very similar, though with much larger maculae, particularly the coniform macula is very large. Hindwing whitish, dusted with brown, veins and margin darker. Florida, Texas, Colorado, California. — The larva is blackish-olive with double white, elliptical dorsal spots and a broad white lateral band, it lives on *Linaria canadensis*.

15. Genus: **Oncocnemis** *Led.*

A very large genus with numerous North American species all of which seem to be rare, for there are but very few specimens even in large collections. Proboscis developed, frons smooth, eyes large. Thorax chiefly covered with scales, in front and behind with loose tufts, abdomen tuftless. The anterior tibiae exhibit inside at the ends a short bent claw, often also outside a small one. As to the palearctic species cf. vol. III, p. 120.

O. mirificalis *Grt.* (26 b). This species and the next 5 have yellow hindwings bordered with black. *mirificalis*. Forewing dull blackish-brown, with a black basal ray as far as the long coniform macula, which is encircled with whitish; transverse lines rather indistinct, single, behind the posterior line dusted with whitish; the upper maculae are in whitish rings and connected by a thick black streak, the ring-macula is elliptical. Undulate line narrow, white, proximally with small black sagittae. California, Nevada.

O. dayi *Grt.* (26 c) is grey, with purple brown dusting, with double transverse lines filled up with *dayi*. white; the small ring-macula is round, without the black streak connecting it with the reniform macula behind which there is a whitish spot; fringes black speckled with white. Hindwing pale yellow, at the base brownish with a broad black marginal band. Colorado.

O. euta *Sm.* (26 d) has brown forewings dusted with grey, with a faint black basal ray, both the *euta*. transverse lines quite extinct, undulate, the two upper maculae small, in whitish rings, the ring-macula oblong elliptical, the coniform macula whitish; in the marginal area, which is darkened by a blackish brown, there are on black, small sagittae the minute, grey, undulate linear lunae. Hindwing yellow with a broad black marginal band. From Utah.

- hayesi*. **O. hayesi** Grt. (26 d) has a light reddish-brown ground-colour, in the marginal area more brown, the undulately dentate transverse lines beginning at the costal margin with black spots, between the light-ringed maculae with a faded brown median line; undulate line only marked by a darker proximal shading. Hindwing orange, dusted with brown, with a broad black marginal band. From Canada, Colorado, and California.
- regina*. **O. regina** Sm. (26 d) is marked somewhat like *hayesi*, but smaller, with broader wings and of a very much lighter colour, light grey mixed with ochreous yellow and often tinted pink, not distinctly marked. The hindwing is lighter yellow, the marginal band narrower. Canada.
- corusca*. **O. corusca** Sm. (= *ate* Dyar) (26 d) is a very small, black species with a silky lustre, strewn with white, particularly in the basal and subterminal areas; transverse lines whitish, particularly the anterior line very indistinct, the upper small maculae in whitish rings; the white undulate line becomes more distinct analwards. Hindwing orange with a moderately broad black marginal band. California.
- exemplaris*. **O. exemplaris** Sm. (26 c). Forewing greyish-white, strewn with blackish, the two black transverse lines distally edged with white, the posterior line double at the costal margin; the small, blackish-pupilled maculae are encircled with whitish, before the irregular whitish undulate line proximally darkened with blackish and minute black sagittae; the marginal area behind them is lighter. Hindwing black, with a large, triangular, whitish discal spot not reaching to the proximal margin, with a black discal spot in it. California.
- albifasciata*. **O. albifasciata** Hmps. (= *fasciata* Sm.) (26 c) is larger than the preceding, similarly marked, behind the postmedian line broadly brightened up by whitish, in the basal area light ash-grey. The white band of the hindwing extends to the proximal margin. Canada, Colorado, California.
- melantho*. **O. melantho** Sm. (26 d) is still larger, with an ochreous-whitish body, the forewing whitish, mixed with blackish and ochreous-yellow; transverse lines double, the posterior line dotted white on the veins; ring-macula round, whitish, reniform macula yellow, encircled with black, between both a broad black median shade; undulate line on both sides edged with blackish spots. Hindwing black, with a light yellowish median band and a black discal spot and black veins. California.
- pudorata*. **O. pudorata** Sm. (26 e) is on the blackish-brown forewing mixed with grey and postmedianly dusted with white, the blackish transverse lines are rather indistinct, faded; the upper maculae in grey rings with a faded median line between them; the dentate undulate line is shaded with dark, proximally with minute sagittae. Hindwing whitish, basally dusted with dark, with a black marginal band. Canada.
- tenuifascia*. **O. tenuifascia** Sm. (26 e) is distinguished by a very narrow white discal band on the blackish-brown hindwing. Forewing brown, dusted with blackish and grey, postmedially somewhat whitish; the transverse lines are double, the posterior line filled up with whitish, the small maculae in whitish rings; before the light undulate line there are minute black sagittae. Colorado.
- balteata*. **O. balteata** Sm. (26 c). Forewing in the basal half reddish-yellow, dusted with dark brown, behind it broadly white as far as the blackish-brown marginal area; transverse lines double; the ring-macula is small, brown, encircled with black and in a white ring, the reniform macula very large, incompletely encircled with reddish; the irregular undulate line consists of small white lunae near the margin, proximally and distally irregularly spotted black. Hindwing white with a broad black marginal band. Described from Colorado.
- terminalis*. **O. terminalis** Sm. (26 d) is a much larger species, reddish-brown, in the marginal area darkened with blackish, the transverse lines marked by small black spots at the costal margin, otherwise by single black dots, the small maculae are ringed whitish; the veins of the marginal area striped black, between them with the small black and white sagittae of the undulate line. Hindwing as in *balteata*. Colorado.
- linda*. **O. linda** B. & McD. (26 c) resembles *regina* in the marking of the forewing, but it is easily distinguishable from it by the transparent white hindwing with a brownish-grey marginal band; forewing white, brownish-yellow, in the marginal area dusted with smoke-brown, with blackish transverse lines starting from large black costal spots, the maculae encircled with ochreous-yellowish. From California and Arizona.
- lindseyi*. **O. lindseyi** nom. nov. (= *punctilinea* B. & Linds. nec Hmps.) is very closely allied to *linda* (26 c), the ground-colour of the forewing varying from a yellowish pink to a pinkish brown, transverse lines blackish, starting from large costal spots, the posterior line intensified by dots on the veins which are often singly present; behind it the ground-colour is blackish as far as the undulate line, where it is sharply defined towards the marginal area in which the veins are marked black; the maculae are somewhat lighter than the ground. Hindwing transparent white with a sharply defined, broad, brownish-grey marginal band. Expanse of wings: 29 to 32 mm. Arizona, taken in September, October.
- deceptiva*. **O. deceptiva** B. & Linds. is also allied to the preceding; forewing whitish, feebly dusted with reddish-yellow, and strewn with brown, except the surroundings of the posterior transverse line, the most densely before the median shade; transverse lines like in the two preceding, but the posterior line without dots on the veins; the whole distal-marginal area almost to the postmedian line is blackish, only occasionally there are light scales indicating the course of the undulate line. Hindwing as in *lindseyi*. Expanse of wings: 29 to 32 mm. Arizona.

O. iricolor *Sm.* (26 c) has ochreous-whitish forewings irrorated with a reddish brown, with a faded *iricolor*. silvery bluish band before the anterior transverse line, some more silvery blue spots being situate in the centre of the hindmargin and 3 before the undulate line; transverse lines black, the posterior line finely dentate. Hindwing yellowish-white with a brownish-black marginal area and white fringes. Colorado.

O. levis *Grt.* (26 c). Forewing light reddish-brown, irrorated with grey and blackish, subterminally *levis*. almost white with black veins, the black transverse lines are double, filled up with white; the long whitish coniform macula encircled by black extends to the posterior transverse line, the narrow whitish upper maculae are centred and surrounded by black; the undulate line is composed of small white sagittae with black wedge-shaped streaks before and behind them. Hindwing yellowish brown with a black marginal band. Colorado, Denver, Arizona.

O. sanina *Sm.* is very similar to *levis*, but smaller, less clearly marked, the hindwing less yellowish; *sanina*. the coniform macula is shorter and never extends to the postmedian line, instead of the upper maculae there are only lighter small spots, the wedges in the marginal area are faded, not distinct, so that the marginal area looks less striped. Expanse of wings: 28 to 30 mm. Colorado.

O. lepipoloides *McD.* is so entirely similar to *Lepipolys perscripta* (26 b) that, in doubtful cases, it *lepipoloides*. is only discernible by the smooth frons. On the forewing we miss the brown colouring at the transverse lines which are single, the posterior line being on the submedian fold inwardly angular and less dentate; there is no coniform macula and before the undulate line there are no small sagittae. Hindwing brownish white with a broad blackish-brown marginal band. Expanse of wings: 32 mm. Canada (Alberta) in August, *perscripta* flies in February until April.

O. simplex *Sm.* (26 e) likewise resembles *levis*, but it entirely lacks the coniform macula and exhibits *simplex*. a large whitish spot behind the postmedian line in the anal half. From Utah and Colorado.

O. meadiana *Morr.* has bluish-grey forewings with single black transverse lines, the central area *meadiana*. between them is somewhat darker, without a coniform macula, the round ring-macula is surrounded and centred with black, the reniform macula is hued with reddish, between both a faded median shadow, the interrupted light undulate line is on both sides marked with blackish. Hindwing whitish with a faded blackish-brown marginal band. Expanse of wings: 28 mm. Arizona.

O. saundersiana *Grt.* (26 c). Forewing light brown with a golden reflection, in the basal and subterminal areas irrorated with whitish-grey, the veins in the marginal area black-striped, and double transverse lines, *saundersiana*. all the 3 maculae are small, surrounded with black and centred with brown, between them a faded black median line. Undulate line whitish with black wedges before and behind it. Hindwing light brownish, in the marginal area faded blackish-brown. Canada, Illinois, Missouri, Texas.

O. pernotata *Grt.* (26 e) is similar to *saundersiana* in the marking, but lighter, more greyish-white, *pernotata*. a little irrorated with brown, only in the marginal area slightly darker, the central area not so prominently dark; the coniform macula is, in the shape of a thick black stripe, connected with the posterior transverse line; the undulate line is quite indistinct except its anal part, only in the centre with some dark wedges before it. From Arizona.

O. polingi *Barnes* (26 c) has light brown, postmedianly still lighter forewings with double black *polingi*. transverse lines, large bluish-grey upper maculae surrounded with black, and a very large coniform macula which touches the elliptical ring-macula; an intense black median shadow is nearing the posterior transverse line in the lower half; marginal area irrorated with brownish, with black veins, before the scarcely marked undulate line there are 3 brown sagittary spots in the lower half. Hindwing yellowish white with black border, veins, central spot, and postmedian line. Arizona.

O. fasciata *Edw.* (26 e) is a small, dark greyish-brown species, remarkable by the broad faded black *fasciata*. median shadow; the double transverse lines are rather indistinct just like the upper maculae which are feebly surrounded with whitish; undulate line indistinctly dark with faint sagittae before it and a grey blotch at the anal angle. Hindwing light grey, at the margin darkened. Colorado.

O. occata *Grt.* (26 c). Forewing light reddish-brown, irrorated with whitish except the central area, *occata*. in the marginal area black-veined, with single transverse lines and a black median line which is thickened at the costal margin and hindmargin; maculae in whitish rings, finely encircled with black, with black streaks before and behind the undulate line which is composed of small white sagittae. Hindwing light brown with a darkened border. Texas, Colorado, Arizona, California.

O. viriditincta *Sm.* (26 f) has red-brown forewings tinted with olive-green, with single transverse *viriditincta*. lines being bordered with white on the averted sides, the three small maculae are encircled with black; the whitish undulate line is proximally shaded with blackish. Hindwing light brown, on the veins and margin darkened. From Canada.

O. laticosta *Dyar* (26 f) is recognizable by the broadly lighter costal-marginal part extending down *laticosta*. to the median, below it the light reddish-brown forewing is irrorated with a blackish brown; transverse lines quite indistinct and marked by single dots, the posterior line distally slightly edged with whitish; maculae

finely encircled with black, the ring-macula elliptical, the reniform macula below dark-centred; marginal area back-veined, between them with black sagittae before and behind the whitish undulate line. Hindwing light brownish with a dark border. Arizona.

flagrantis. **O. flagrantis** Sm. (26 f) is a very small species exhibiting the greyish-white ground irrorated with brown, only the marginal area remaining lighter; the transverse lines are rather indistinct, the anterior line double; maculae whitish, the reniform macula large, almost quadrangular; the undulate line is only marked by the contrast with the lighter marginal area. Hindwing light brown with a dark anal-angular spot. California, Arizona.

primula. **O. primula** B. & McD. (26 f) is closely allied with *flagrantis*, larger, more brightly coloured and with white hindwings in both sexes. Forewing flesh-coloured, in the central area irrorated with black, with distinctly prominent maculae; the posterior transverse line is double, subterminally with single black spots. The hindwing shows a small black double spot at the anal angle. Described from California.

singularis. **O. singularis** B. & McD. (26 f) is another small, remarkably narrow-winged species very similar to *flagrantis*. Forewing ochre-yellowish, densely irrorated with blackish-brown, only the basal area remaining lighter yellowish with rather indistinct markings, the maculae of the ground-colour in the slightly blackened central area; of the undulate line there exists merely a minute light spot at the anal angle. Hindwing whitish with a dark marginal band. Arizona.

augustus. **O. augustus** Harv. (26 f) is much larger, the forewing light red-brown, strewn with black, in the central and marginal areas irrorated with a brownish grey, with single transverse lines, the posterior of which is dentate; the maculae are light reddish-brown, in light yellow rings and finely encircled with black, there is also a large coniform macula, a faded median line expands in the cell into a black spot; the undulate line consists of white jags proximally bordered with black sagittae. Hindwing white with a faded brown subterminal band. Texas, California, Arizona.

nita. **O. nita** Sm. is very similar to *augustus* (26 f), smaller on an average, more loam-coloured yellowish-grey, rarely with a slight reddish tinge, the veins finely bordered with white, the central and subterminal shadows distinct, the fringes at the ends of the veins crossed by white. Expanse of wings: 27 to 36 mm. California.

glennyi. **O. glennyi** Grt. (26 g) is one of the largest species with light red-brown forewings irrorated with a blackish brown, single crenulate transverse lines and large maculae encircled with black inclusive of the coniform macula; the undulate line consists of small grey sagittae, proximally before them with black ones. Hindwing brownish with darker veins and margin. Colorado.

riparia. **O. riparia** Morr. (26 g) is much lighter than *glennyi* with almost entirely extinguished transverse stripes, much smaller maculae, an oblong ring-macula, much fainter sagittae of the undulate line. Hindwing light yellowish-brown, in the margin darker. Massachusetts, New York, Buffalo.

lacticollis. **O. lacticollis** Sm. (26 f) is a smaller species easily discernible by the yellowish-white head and collar with a jet-black line between the antennae. Forewing dusty ash-grey without distinct transverse lines and maculae, with fine black veins, and in the marginal area with internerval streaks. Hindwing yellowish-grey, in the distal half smoke-brown. Utah.

cibalis. **O. cibalis** Grt. (26 g) resembles *riparia*, the whitish forewing is strewn with black, with black veins, the transverse lines only marked at their beginnings at the costal margin, without the ring-macula, the reniform macula only marked by a minute dark spot in the lower cell-angle, with a long, pointed coniform macula; undulate line similar to that of *riparia*, though more prominent and obliquely running to the apex. Hindwing white with brown veins and margin. Colorado. — f. **canadicola** Strd. (= subsp. 1 *Hmps.*) is doubtfully placed here, being smaller, of a more monotonous grey colouring, the marginal area not lighter whitish, with more distinct black sagittae before the undulate line and a distinct quill on the collar. Canada.

astrigata. **O. astrigata** B. & McD. (26 g). Frons, head, and base of collar deep blackish-brown; forewing grey, in the marginal area irrorated with brown, all the transverse stripes and maculae being absent, with fine black veins in the marginal area, with blackish-brown fringes. Hindwing diaphanous light grey, the veins, costal margin and distal margin irrorated with brown. Utah.

melalutea. **O. melalutea** Sm. (26 g) has yellowish forewings irrorated with black and grey particularly in the basal and marginal areas, with double dentate transverse lines and a row of white vein-dots behind the distal line, the somewhat lighter maculae are finely encircled with a dark colour; the undulate line consists of an irregular row of white dots. Hindwings lustrous yellowish-white with a blackish marginal band. Colorado.

extremis. **O. extremis** Sm. is light grey, in the marginal area lustrous brownish-black, with intense, single, black transverse lines and a broad faded median shadow, without any macular marking and undulate line. Hindwing yellowish white with a broad black marginal band. Expanse of wings: 33 mm. From Canada (British Columbia).

chorda. **O. chorda** Grt. (= *refecta* Sm.) (26 g) is similar, more reddish-brown, in the distal half of the central area whitish with intense black single transverse lines, the median shadow only marked at the costal margin, and with a whitish shading of the undulate line; no maculae except traces of the coniform macula. Hindwing white with blackish veins and a blackish-brown marginal band. Colorado, California.

O. rosea Sm. (26 g) resembles *chorda*, but it is easily distinguished by the presence of the two upper *rosea*. maculae representing small whitish spots, and by a faint median line; undulate line whitish, proximally with small brown sagittae. Hindwing white with brown veins and margin. Colorado.

O. youngi McD. Forewing fawn-coloured, in the central area light brown, in the terminal area purple *youngi*. grey with single black transverse lines, the posterior line forming a sharp angle on the middle radial vein, the small maculae surrounded with black, the narrow coniform macula also being present. The whitish hindwing is smoky in the distal third with traces of a darker transverse line before it. Expanse of wings: 38 mm. British Columbia.

O. columbia McD. belongs to the same group and has deep purple grey forewings being postmedianly *columbia*. somewhat lighter. The single black transverse lines are distinct, the anterior line being bordered by the bow of the coniform macula, whilst the posterior line is traceably crenulated on the veins; the ring-macula is large and round, the reniform macula is short and broad; a darker undulate line is traceable. Hindwing in the basal half white, distally and on the veins smoky. Expanse of wings: 30 mm. British Columbia.

O. simplicia Sm. (26 h). Forewing yellowish-redbrown, marked as in *columbia*, but the posterior *simplicia*. transverse line almost extinct; the strong, black anterior transverse line is on the submedian fold connected with the subbasal transverse line by a black streak. Maculae in light rings, the undulate line marked by single small light scales. Hindwing diaphanous yellowish-white, at the margin darker. Colorado.

O. deserta Sm. was described as *Homohadena*, but it belongs hereto and is allied to the preceding. *deserta*. Forewing dark greyish-brown, in the costal area lighter with dark-striped veins; the subbasal line and the anterior strong transverse line are connected on the submedian fold, the posterior transverse line is fine, the maculae in light rings, the ring-macula obliquely elliptical; the undulate line consists of small light spots, behind them black internerval streaks. Hindwing white with dark veins and margin. Expanse of wings: 31 mm. Colorado.

O. punctilinea Hmps. (26 h). Forewing monotonously brown with dark-striped veins, the transverse *punctilinea*. lines more or less broken up into dots, the small maculae with faint whitish rings, the reniform macula centred with blackish; undulate line whitish. Hindwing light reddish-brown, at the margin darker. Arizona.

O. bakeri Dyar (26 h) has grey forewings with a brown marginal area, strong black transverse lines, *bakeri*. the maculae white-ringed, encircled with black and centred with brown, and there are also traces of the coniform macula; the undulate line is entirely absent. Hindwing diaphanous white, with brownish veins and margin. Nevada.

O. pohono Sm. (26 h) is somewhat like *bakeri*, darker, more brownish-black, the transverse lines on *pohono*. the averted sides bordered with a lighter colour; the ring-macula is very small, surrounded with black, the reniform macula narrow, distally scaled whitish; behind the postmedian line black vein-dots, the irregular undulate line is proximally bordered with a darker colour. The brownish hindwing has a darkened margin. On the Californian mountains *).

O. homogena Grt. (26 h) is larger than the preceding, more variegated owing to red-brown irroration *homogena*. on the greyish-white ground, with darker, prominently blackish-brown central and marginal areas, somewhat faded transverse lines and broad median shadow; the maculae are brownish-grey, surrounded with black, the ring-macula is oblong; undulate line as in *pohono*, fringes speckled. Hindwing light brown, at the margin darker. From Colorado.

O. umbrifascia Sm. (26 i). Forewing on its greyish-white ground coarsely strewn with brown, very *umbrifascia*. conspicuous by the brownish-black central area, which is defined by white transverse lines, the posterior of which encircles the reniform macula in a large bow; in the brownish irrorated marginal area the undulate line is absent. Hindwing brownish, margin and vein darkened. Colorado.

O. piffardi Wkr. (= *atrifasciata* Morr.) (26 i) is larger, more blackish-brown, the central area is deep *piffardi*. black, without maculae, the posterior transverse line therefore does not form a bow; the undulate line is marked by dark shading, in the blackish marginal area there are internerval streaks. Hindwing white with a broad black marginal band. Canada, United States (Maine, New York).

O. barnesi Sm. (26 i) has brownish-grey, postmedianly more purely brown forewings with slightly *barnesi*. bent broad black transverse lines, without maculae and undulate line, and black veins and internerval stripes in the marginal area. Hindwing whitish, towards the margin darkened with blackish. United States (Yellowstone Park).

O. figurata Harv. (26 h) is similar, smaller, more brownish on its greyish-white ground, likewise *figurata*. without maculae, the transverse lines below the cell bent towards each other and submedianly connected by a black streak; from the cell-end a black streak extends to the distal margin which shows black internerval streaks as in the preceding. Hindwing reddish-brown. Colorado, Nevada.

O. major Grt. (26 i) is a large species with brownish-grey forewings and indistinct transverse lines *major*. marked by vein-streaks and dots, and a brown median shadow, the oblong ring-macula being almost confluent

* *pohono*, according to the latest researches, belongs as a synonym to *niveirena* Harv. in the genus *Namangana* (see there!) together with *Bryomima falsa*, their generic position, however, is not yet certain.

with the reniform macula; there is also a long, pointed coniform macula, connected with a black basal ray; black veins in the marginal area are interrupted by white dots of the undulate line. Hindwing whitish, at the *aequalis*. margin brownish. From Colorado, California. — The form *aequalis* *Grt.* from Arizona is of more contrasting *curvicolis*. colours, the maculae are more distinctly surrounded by white. — *curvicolis* *Grt.* differs in a shorter ring-macula which is not confluent with the reniform macula. The two latter forms may not belong to one species with *major*, but in any case they are very closely allied to it.

- ciliata*. **O. ciliata** *Sm.* (26 h). Forewing greyish-white, strewn with blackish-brown, the darkest at the costal edge of the central area, with dark veins, without transverse lines; a black basal ray on both sides bordered with white is confluent with the long coniform macula; the upper maculae are in whitish rings, the oblong ring-macula is pointed towards the base; in the marginal area grey with black internerval streaks, the undulate line only marked as a short shadow at the costal margin and anal angle. Hindwing greyish-brown, towards the base lighter. Colorado.
- intruda*. **O. intruda** *Sm.* has the habitus of *ciliata* (26 h); the colour of the forewing is more bluish-grey, the transverse lines are only marked at the costal margin, the coniform macula is absent, the ring-macula is a black sagittary spot, the reniform macula a small black luna in a yellowish ground; the undulate line is only present at the costal margin and anal angle; in the marginal area between the black veins black intermediate streaks. Hindwing whitish with smoky veins and margin. Expanse of wings: 25 to 28 mm. New Mexico.
- obseurata*. **O. obscurata** *B. & McD.* (26 k). Dark brownish-grey with quite extinct markings, the transverse lines only marked by black costal-marginal spots, in the subterminal area strewn with whitish; the ring-macula being surrounded by whitish is connected by a white streak with the similar reniform macula, also the coniform macula is encircled with whitish; in the marginal area there are black internerval streaks, the undulate line is absent. Hindwing diaphanous white with a narrow dark marginal band and a small central spot. Arizona (White Mountains).
- semicollaris*. **O. semicollaris** *Sm.* in its exterior resembles *griseicollis* (26 k), the connected transverse lines are as in *figurata* (26 h). Forewing uniformly ashy-grey with very fine, rather indistinct markings; maculae and undulate line entirely absent; from the cell-end a black streak extends to the margin which also shows other black internerval streaks. The whitish hindwing is smoked at the margin. Head beneath with a brown, black-edged band, half of the collar being of a deep blackish brown. Expanse of wings: 31 mm. British Columbia.
- chandleri*. **O. chandleri** *Grt.* (= *poliochroa* *Hmps.*) (26 i). Forewing light ochre-yellowish grey, strewn with black, and incomplete transverse lines of that colour arising from thick costal-marginal spots, the posterior line being finely crenulate; the upper maculae are confluent, the coniform macula is connected with a black basal ray; between the black veins of the marginal area there are small white and black sagittae of the undulate line. Hindwing yellowish-white with dark veins and a broad blackish-brown marginal band. Canada to California.
- colorado*. **O. colorado** *Sm.* (= *chandleri* *Hmps.*) (26 i) is irrorated with brown in the greyish-white ground, only the posterior transverse line is somewhat more distinct, both being marked by black costal marginal spots, the long coniform macula which is parted by black and connected with the black basal ray extends to the posterior transverse line; the upper maculae are confluent. Undulate line and veins of the marginal area as in *chandleri*, also the hindwing except the marginal band which is not so dark. Colorado.
- mackiei*. **O. mackiei** *B. & Benj.* is very closely allied to *colorado* (26 i), softer and smoother, not so much irrorated, without the black shading round the coniform macula, the upper maculae not filled up with black streaks. Hindwing somewhat darker. Expanse of wings: 31 to 34 mm. Canada (Alberta).
- sagittata*. **O. sagittata** *B. & McD.* (26 k). Forewing grey, in the basal area blackish, with rather indistinct transverse lines which are edged with white on the averted sides; the small oval ring-macula is in a light grey ring, the reniform macula is inside bordered with black and white, a little irrorated with orange, between both the cell is darkened by black; in the black subterminal area there is the grey, distally sharply white dentated undulate line with a W as far as the margin. Hindwing yellowish-white with a black marginal band. Arizona.
- extranea*. **O. extranea** *Sm.* (26 k). Forewing light greyish-brown without transverse lines, only the posterior line being occasionally slightly marked, a black basal ray is occasionally united with the long coniform macula, the upper maculae being confluent with a thick black central streak in both; in the marginal area black internerval streaks which are above between the radial veins bordered with white. Hindwing light brown with a darker margin and veins. Colorado.
- utahensis*. **O. utahensis** *B. & Benj.* (= *extranea* *B. & McD.*) (26 k) is very closely allied to *extranea*, somewhat smaller, lighter, without brownish tints, the undulate line is often marked by white dots. The genitals are different. Described from Utah.
- tetrops*. **O. tetrops** *Dyar* (26 k) is likewise similar to the preceding, darker brown, the upper maculae are represented by black spots connected by a streak, the posterior transverse line is marked by black vein-dots; the black basal ray is confluent with the linear coniform macula; marginal area darkened with black veins and streaks between them, the fringes are speckled. Hindwing whitish, veins and margin brownish. Arizona.

O. dunbari *Harv.* Forewing greyish-black, sharply marked, anterior transverse line double, filled *dunbari*, up with white, posterior line single, distally bordered with white; coniform macula small, round, upper macula large, between them a strong black median line, the reniform macula yellowish white; undulate line white, somewhat dentate. Hindwing white, towards the margin brownish. From Vancouver. — **definita** *B. & McD. definita*, (33 g) is a somewhat lighter form than the type, also somewhat smaller and originates from Utah; specimens from Colorado form the transition.

O. griseicollis *Grt.* (= *gerdis* *Sm.*) (26 k). Forewing whitish, strewn with black with indistinct markings, *griseicollis*, hardly traceable transverse lines, the anterior line being fine, straight, the maculae finely encircled with black, from the reniform macula a black streak extends to the black-veined marginal area. Hindwing diaphanous whitish. Arizona.

O. sectilis *Sm.* (26 k) is a very small species which, together with the following *sectiloides*, was hitherto *sectilis*, listed as Acronyctine in the genus *Leucocnemis*, but which is closely allied to *griseicollis*. Forewing greyish-white with brown markings, single transverse lines and 3 large maculae inclusive of the coniform macula, the undulate line being marked by shading on the proximal side. Hindwing of a pure white. Texas.

O. sectiloides *B. & McD.* (= *subtilis* *B. & McD.*) (26 l) is very similar to *sectilis*, darker, of a more *sectiloides*, greyish-brown ground-colour; from the centre of the reniform macula a black streak extends to the undulate line which is more distinctly white-scaled and before which there are small dark sagittae, behind it the marginal area is somewhat lighter. Described from Texas.

O. ibapahensis *B. & Benj.* is closely allied to *chandleri* *Grt.* (26 i); smaller, ground-colour light grey *ibapahensis*, without any yellowish-brown tints, of a more uniform colouring, the upper median and lower radial veins prominently white, beneath conspicuously yellow, without the central spot on the hindwing. Expanse of wings: 29 to 30 mm. A local species from Utah (Ibapah Mts.).

O. nigrocaput *Sm.* (26 l). Head and forewing yellowish-white, the head with a jet-black frons and *nigrocaput*, last palpal joint, the forewing strewn with light brownish, without any trace of transverse lines and maculae with 2 black longitudinal stripes, one below the median, the other extending from the centre of the cell on the discal fold to the margin; in the marginal area with fine black internerval streaks. Described from Colorado.

O. atricollaris *Harv.* (26 l) is somewhat similar, but of a browner colouring, the two black longitudinal *atricollaris*, stripes being separate in *nigrocaput* are flown together here into one, below it the distinct coniform macula. Transverse lines marked by costal-marginal spots, the posterior line also by a fine line in the lower half of the wing. Hindwing with brownish veins. Texas, Colorado, Arizona.

O. poliafascies *Dyar* (= *antonito* *Barnes* pro parte, *barbara* *B. & McD.*) (26 l), described as *Homon-* *potiafascies*, *cocnemis*, cannot remain there owing to its scaled thorax, and has recently been placed to this genus. It is somewhat like a palearctic *Antitype xanthomista* *Hbn.* (Vol. III, pl. 33 h); forewing on the whitish-grey ground densely strewn with black and orange, the latter colour particularly in the macular filling, along the dentate transverse lines and in the marginal area. Hindwing whitish, on the veins and margin broadly darkened. Arizona and Mexico.

16. Genus: **Copanarta** *Grt.*

Very closely allied to the preceding genus and by HAMPSON erroneously listed as an Acronyctine, the eyes exhibiting distinct ciliary borders. The only difference is to be found in the somewhat longer, bent claw on the inside of the anterior tibia, so that properly speaking the two genera ought to be combined as was done by SMITH.

C. aurea *Grt.* (26 l). Forewing blackish-brown, irrorated and strewn with purple grey, in the proximal *aurea*, half of the central area of a purer black with black transverse lines and 3 maculae surrounded by black, the reniform macula filled up with white and centred brown, the grey undulate line crenulate. Hindwing orange with a black marginal band. Texas, Arizona, Mexico.

C. nigerrima *Sm.* (26 l) is somewhat smaller on an average, blacker, in the whole basal and central *nigerrima*, areas almost purely black with more distinct, clearer markings, particularly the ring-macula being distinct; the undulate line is lighter and likewise more distinct. The hindwing is of a deeper orange. Apparently a distinct species and not only a form of the preceding. Arizona.

17. Genus: **Stylopoda** *Sm.*

On account of its ciliated eyes it is also a Cucullian and closely allied to *Oncocnemis*. The rounded, somewhat rough frons exhibits a horny plate below; the eyes are oval, strangulated; the erect palpi are short with a porrect terminal joint; the anterior tibiae are short and broad, outside with a short, inside with a long, bent claw. 2 small species, the exterior of which resembles the species of *Pseudacontia*.

St. cephalica *Sm.* Body and wings black with black undulate transverse lines bordered with a lighter *cephatica*, colour, the anterior line extended into a point at the oblong coniform macula, the posterior line being quite indistinct; the ring-macula is quite extinct; the postterminal area is white, behind it mixed with black, the

marginal area blackish-brown; before it is the strongly dentated undulate line. Fringes of hindwings at the apex brown, otherwise mixed with white. Expanse of wings: 18 mm. California.

aterrima. **St. aterrima** Grt. (261) probably also belongs hereto, and not to *Pseudacontia*. Forewing blackish-brown, somewhat irrorated with grey, with rather indistinct black transverse lines, the posterior line double and filled up with white, behind it extensive white irroration; the small maculae are brown, surrounded by black; instead of the undulate line there are minute white spots with black ones before them. Hindwing blackish-brown with an indistinct lighter median line. California.

18. Genus: **Cerapoda** Sm.

Distinguished from the neighbouring, closely allied genera by long claw-like spines on the outside of the first 2 tarsal joints. The sealed thorax exhibits loose tufts in front and behind, the abdomen shows a tuft on the first abdominal ring. Otherwise entirely like *Oncocnemis*. North American.

oblita. **C. oblita** Grt. (= *strigata* Holl. nee Sm., *deserta* Grin., *insertans* Sm.) (27 a). Forewing on the greyish-white ground irrorated with ochreous and strewn with blackish-brown, the veins darkened; a black basal ray is fused with the lower end of the long pointed coniform macula, above it a white patch in the cell; no transverse lines; end of median and the transverse vein are marked white, the ring-macula is oblong, pointed; subterminal area on both folds tinted yellowish; the apex is parted by an oblique whitish blotch. Hindwing white with brown veins and margin. The species varies somewhat. — The form **arrosta** Dyar has a still longer ring-macula and a thicker white streak at the end of the median, and in the marginal area there are round dark internodal spots distally bordered with white. Hindwing a little darker. — Nevada, Colorado, California.

strigata. **C. strigata** Sm. (= *oblita* Dyar nee Sm.) was described as a *Calophasia*. It is very similar to the preceding, smaller, with darker and more uniformly grey forewings, in the region of the reniform macula the thick white streak of *oblita* is entirely absent. Expanse of wings: 30 mm. Colorado.

stylata. **C. stylata** Sm. (27 a) is considerably larger than *oblita*, more blackish-brown, in the marginal area still darker, on the submedian fold white-striped, and with entirely faded transverse lines; the maculae are small, whitish, surrounded by black, the white erenulate undulate line is proximally bordered with blackish. *arida*. Hindwing white, at the margin narrowly brownish. Colorado, Nevada, Utah, New Mexico. — **arida** B. & Benj. is a small, very pale, brownish yellowish-white desert-form from California.

19. Genus: **Homoncocenemis** Hmps.

Distinguished from the allies by the thorax being clad with hair and hair-like scales without tufts, the abdomen being neither tufted. The anterior tibiae outside show a bent spine. Only known from North America.

fortis. **H. fortis** Grt. (= *vorax* Behr) (27 a) is a larger species with dark brown, lustrous purple wings, the transverse lines marked by vein-dots without maculae, the undulate line marked by small black diffuse spots. Hindwing white, on the veins and margin irrorated with golden brown. California, Nevada. — The thin brown or grey larva with 2 rows of black longitudinal dots and a metallic green ventrum lives on ash-trees. — The form **picina** Grt. has no small black undulate linear spots and no black marginal dots and a less curved postmedian row of dots. Arizona.

psaphidioides. **H. psaphidioides** Dyar (27 a) has brownish-grey forewings with a white undulate line near the margin, a black basal and anal ray and a black median shade, black dentate transverse stripes, the anterior stripe being double and with large light, black-ringed maculae; veins in the marginal area black striped. Hindwing white with a blackish-brown marginal line. It recalls an *Acronycta*. From Mexico (Zacualpan).

20. Genus: **Copitarsia** Hmps.

Very closely allied to *Cerapoda* from which it chiefly differs in the thorax being clad with hair and hair-like scales; besides only the first joint of the anterior tarsi shows on the outside bent claws. Half a dozen species of a very uniform insignificant exterior are known from tropical and southern America.

humilis. **C. humilis** Blch. (27 a) is the palest of the allies, forewing narrow, yellowish white, irrorated with red-brown, the markings are feeble, transverse lines double, erenulate, the posterior line distally with vein-dots or streaks, the maculae entirely faded. Hindwing diaphanous white with yellowish veins, in the ♀ more brownish. Chile.

C. consueta Wkr. (= *incommoda* Wkr., *peruviana* Wkr., *inducta* Drc.) (27 a) is very common and *consueta*. widely distributed in the tropics. Forewing brown, a little irrorated with grey, much larger than the preceding and marked almost the same though more distinctly. Hindwing brownish white, on the margin and veins darker. From Mexico to Chile and Argentina.

C. turbata H.-Schüff. (= *heydenreichii* Frr., *decolora* Gn., *inducta* Wkr., *subsignata* Wkr., *hostilis turbata* Wkr., *sobria* Wkr.) is extremely similar to *consueta* (27 a), much more intensely irrorated with grey, with the same marking, but the posterior transverse line is more distinctly double. Hindwing likewise greyer. Colombia, Venezuela.

C. naeniodes Bltr. (27 b) differs from *turbata* in its broader and shorter wings with a straighter distal *naeniodes*. margin, greyish-brown like *turbata*, with the same markings, the maculae in somewhat more yellowish rings, behind the postmedian line whitish vein-dots. Hindwing white, in the ♀ brown, margin and veins greyish-brown. Chile.

C. patagonica Hmps. (27 b). Forewing more yellowish-brown, transverse lines single, bordered with *patagonica*. ochreous-grey, the maculae in yellowish rings; before the yellowish undulate line there are small black sagittae. Hindwing yellowish-brown, towards the margin darker. Patagonia.

C. purilinea Mab. (27 b) is the smallest species, light greyish-brown, watered with a darker colour, *purilinea*. with dark transverse lines not bordered with a lighter grey, without maculae, with a faint dark median shade; instead of the undulate line there are short black internerval streaks. Hindwing light brown. From Patagonia.

21. Genus: **Homohadena** Grt.

Very closely allied to the genus *Oncocnemis*, but with unarmed anterior tibiae and neither on the thorax nor abdomen tufted. A small number of North American species recalling *Oncocnemis* also by the exterior.

H. badistriga Grt. (27 b) is irrorated with coppery brown on the whitish ground, and easily discernible *badistriga*. by a thick black basal ray and another one along the discal fold as far as the margin; transverse lines single, posterior line distally bordered with white; in the marginal area there are black internerval streaks above and beneath bordered with white. Hindwing yellowish-brown, at the margin darker. Canada to Texas, Kansas, and Colorado. — The light brown larva with darker brown and fine white longitudinal stripes presumably lives on low plants. — **rayata** Sm. (27 b) is a smaller form without the coppery tint, with finer transverse lines *rayata*. and stronger marginal streaks, in the ♂ with almost white hindwings. From Texas.

H. infixa Wkr. (= *kappa* Grt., *retroversa* Morr.) (27 b) is a larger, beautiful species. Forewing red- *infixa*. brown with a black basal ray being prolonged into a connecting line between the two thick black transverse lines, another black ray extends from the ring-macula on the discal fold to the margin; the indistinct light undulate line is proximally bordered by small black sagittary spots. Hindwing brownish, towards the base lighter. The ♀ is much darker. Iowa, Missouri, Kansas, Texas, Florida. — **fifia** Dyar (= *dinalda* Sm.) (27 c) *fifia*. is much lighter, ash-grey, and also smaller. From British Columbia.

H. induta Harv. (27 b) resembles the preceding, but the black discal longitudinal stripe and the *induta*. maculae are entirely absent, the transverse lines are finer, the ground-colour is a light reddish brown, strewn with grey and black, with fine dark veins; the undulate line is entirely absent. Hindwing brownish, veins and margin darker. Texas.

H. loculosa Grt. (= *continentis* Dyar, *phona* Dyar) (27 c). Forewing on the whitish ground irrorated *loculosa*. with coppery reddish, with fine black veins and similar markings as in *induta*, but the basal streak only extends to the anterior transverse line, which is proximally bordered with white, the distal line being distally bordered so, both being strongly dentated; the maculae are marked whitish, the reniform macula black-centred. Hindwing white, veins and margin brown. New Mexico, Arizona, Mexico.

H. rustica B. & McD. (27 c) approximates the following *incomitata*, from which it differs in the *rustica*. lighter forewing and diaphanous hindwing. Reddish-brown, irrorated with purple brown, with rather indistinct markings, only the posterior transverse line being visible as a light bent line with black vein-dots. Maculae only incompletely surrounded or entirely absent. Hindwing diaphanous white, very slightly brownish at the margin. Described from Arizona.

H. incomitata Harv. (27 c) is larger than *rustica*, reddish-brown with darker veins; the anterior *incomitata*. transverse line rather indistinct, the posterior line with black vein-streaks, without maculae; instead of the undulate line there are fine black vein dots. The whitish hindwing has brownish veins and margin. Texas.

H. inconstans Grt. (27 c). Forewing brownish-grey, head darker, collar grey; transverse lines and *inconstans*. maculae entirely absent, only the veins particularly in the ♀ darker striped. Hindwing brownish-grey, towards the base lighter. Arizona.

H. stabilis Sm. (27 c). Forewing lustrous red-brown, strewn with a darker colour, with quite indistinct *stabilis*. transverse lines and absent maculae; the marginal area is somewhat darker, strewn with blackish. Hindwing brown with a golden lustre. Canada; Washington.

22. Genus: **Pseudanarta** Grt.

Smaller-sized species the general characters of which entirely correspond with the preceding genera; palpi somewhat more erect, head and thorax clad with coarse loose scales, in front and behind with loose tufts, the abdomen exhibits quite a number of tufts. The apex of the forewing is sharper and more produced than in other genera. The species hitherto known are distributed from Canada to Mexico.

- flava*. **P. flava** Grt. (\equiv *dupla* Sm.) (27 d) has dark brown forewings strewn with grey, with a more reddish-brown area in the disc, double transverse lines filled up with whitish and submedianly connected by a black streak, with small rather indistinct maculae; the whitish undulate line, proximally shaded with red-brown, is situated near the posterior transverse line. Hindwing orange with a black marginal band. Canada to California.
- crocea*. **P. crocea** Edw. (27 d) has broader wings, of a greyer colour, with more distinctly white-ringed maculae, a much narrower central area, the posterior transverse line therefore far remote from the undulate line. Hindwing yellow with a very broad black marginal band. Oregon, Colorado, Arizona, New Mexico.
- actura*. **P. actura** Sm. (27 d) is the smallest and darkest species. Forewing deep blackish-brown, with quite indistinct markings, only a white spot above the anal angle being prominent; both transverse lines double, somewhat more filled up with grey; subterminal area likewise somewhat lighter grey warming into the white anal spot. Hindwing light yellow with a broad black margin. New Mexico, Arizona.
- caeca*. **P. caeca** Dod. (\equiv *crocea* Hmps.) is very similar to *flava* (27 d), but it lacks the black basal ray, the posterior transverse line is more uniform and less bent, just like the marginal line; the subterminal area is broader; most easily discernible by the light ochreous stripe above the black streak connecting the transverse lines; the upper half of the central area is ochreous, in *flava* reddish-brown; the filling of the double posterior transverse line is not white, only submedianly; the wings are shorter with an obtuser apex. Utah, Oregon.
- singula*. **P. singula** Grt. (27 d). Forewing more brownish-grey, in the disc brown with a black basal ray, double transverse lines filled up with grey, submedianly connected by black; the grey maculae are brown-centred and encircled by black; before the grey undulate line brown shading and small black sagittae behind it. Hindwing orange with a black marginal band. Texas, Colorado, Arizona.
- flavidens*. **P. flavidens** Grt. (27 d) is larger on an average, without the black streak connecting the transverse lines. Forewing reddish greyish-brown, in the central area darker, the anterior line is indistinctly double, the posterior line single, distally edged with whitish, the maculae are small, in whitish rings; the undulate line as in the preceding, behind it with darker striped veins of the marginal area. Colorado, New Mexico.
- heterochroa*. **P. heterochroa** Dyar (27 d) is an extremely variable, variegated, small insect. Forewing on the whitish ground olive-greenish mixed with brick-red, the veins striped whitish, and similar transverse lines; the whitish, strongly dentate undulate line extends into the apex and is proximally bordered with blackish, the dark marginal line is traversed by whitish. Hindwing orange with a very broad black marginal band. From Mexico.

23. Genus: **Homoanarta** B.-Bak.

This genus was recently detached from the preceding, most closely allied genera; it is distinguished by the still more pointed apex of the forewing with a slight concave excision below it and a very convex centre of the distal margin. The thorax is almost entirely clad with narrow hair-scales intermixed with single hairs; the prothorax exhibits a hooded or almost pencil-shaped, often double-slashed, high tuft being continued in a keel-like shape to the metathorax, where it ends in a loose tuft. Some small Mexican species have been described, two of which proceed as far as North America.

- falcata*. **H. falcata** Neum. (27 d) is on its dark brown forewing scantily strewn with white, with whitish veins particularly in the somewhat lighter subterminal area; transverse lines indistinct, on the averted sides bordered with whitish, the narrow oblique maculae in whitish rings; undulate line and a marginal line very finely whitish. Hindwing orange with a broad black margin. Texas, Arizona, and Mexico (City). — Whether **oblimata** *form nov.* (27 e), from Tehuacan (Puebla), belongs as a form to it, is questionable; it is at once discernible by the broader marginal band of the hindwing not being jet-black but dark greyish-brown, and the orange basal half being darkened by brown scales and much more subdued; the forewing is also of a more subdued greyish-brown, the marking otherwise very similar, the light subterminal band extending into the apex is very prominent.
- senescens*. **H. senescens** Dyar (27 e) has brown forewings with slightly darker basal and marginal areas, very fine transverse lines represented by white scales, large maculae, a round ring-macula, a distally concave reniform macula of the ground-colour, very finely surrounded with white, behind the distal transverse line in the somewhat lighter subterminal area black vein-streaks interrupted by white dots; the undulate line consists of small white internodal spots, behind it there is a marginal line being only on the veins spotted white. The brown hindwing is somewhat lighter ochreous towards the base. Mexico (Tehuacan, Zacualpan).

H. peralto *Barnes* (27 e) is very similar to the preceding, forewing brown with a slight olive tint, finely strewn with white, with very similar markings, the anterior transverse line obliquely to the centre of the hind-margin, the posterior line almost straight to the hind-margin after a slight bend round the reniform macula which is larger and almost quadrangular; undulate line hardly traceable, marginal line composed of white arcuate lines. Hindwing as in *senescens*. Arizona.

H. cristifer *Dyar* (27 e) is much paler greyish-brown, of a more uniform colouring, the central area not darkened, much more finely irrorated with white, not so coarsely strewn, the very large maculae being finely surrounded with whitish are inside darker than the ground, the subterminal area just a trifle lighter; before the margin there are small, flat, dark crescents, on both sides bordered with whitish. Hindwing uniformly brownish-grey with light fringes. Mexico (Zacualpan).

H. farinosa *sp. n.* (27 e) is the largest species, forewing dark brown, throughout strewn with greyish-white scales across the whole surface, so that the markings are extremely difficult to discern merely by somewhat denser accumulations, and there are indeed only recognisable a narrow, oblique reniform macula and the fine arcuate lines of the marginal line. Hindwing brown, towards the base with a slight coppery reflection and greyish-white fringes parted by a dark line. Mexico (Zacualpan), discovered by Robert Mueller. Type in the Coll. DRAUDT.

H. nudor *Dyar* (27 e). Here the white irroration is almost entirely absent, the ground-colour changes from a greyish brown to coppery brown, the central area is somewhat darker prominent, narrow, bordered by the dark transverse lines, and in it, obliquely inwards, a faded median line extends from the lower end of the reniform macula to the hind-margin; maculae darker than the ground, in light rings, the reniform macula strangulated, below somewhat more blackish; veins of the marginal area fine dark, undulate line blackish. Hindwing darker brownish-grey than forewing. Mexico (City).

24. Genus: **Feralia** *Grt.*

Proboscis stunted, palpi short, eyes small, elliptic; the thorax is only clad with rough hair, feebly tufted in front and behind, the abdomen not being tufted, but laterally very hairy. Two North American species are known.

F. jocosa *Gn.* (27 f) is a beautiful green species marked with black and white, with blackish-brown hindwings. — ab. **jocosides** *Strd.* (= ab. 1 *Hmps.*) is almost entirely irrorated with black, except the marginal area, a spot at the costal base, and the maculae remaining green. United States (New Hampshire, New York, New Jersey). — **furtiva** *Sm.*, established upon 1 ♀ from Ontario, seems to form a transition to *jocosides*, the ground colour being smoky-brown, irrorated with a yellowish-brown, intensely marked with white. — The larva is diaphanous green with white dorsal and lateral stripes, below them yellowish crescentiform spots, upwards with a cherry-coloured border. It lives on *Tsuga canadensis*.

F. major *Sm.* (27 f) is irrorated with brown on its greyish-white ground, in the central and subterminal areas quite brown with rather indistinct transverse stripes, the posterior stripe being removed near to the margin; the maculae are grey, the coniform macula flown together with the ring-macula, the reniform macula being strangulated; fringes brown speckled with white. Hindwing brownish with darker veins. United States (New Hampshire, Plattsburg, New York).

25. Genus: **Momophana** *Grt.*

Distinguished from the preceding genus by the well-developed proboscis, the admixture of hair-shaped scales on the thorax, which exhibits tufts in front, in the centre and behind, the two latter being parted. Some pretty green species from Mexico and North America; the genus may at any rate be synonymous with *Feralia*.

M. comstocki *Grt.* (27 f) has black markings on the light green ground, with intense black irroration in the central area and behind it near the anal angle. The hindwing is also green, irrorated with black at the margin with traces of a subterminal band, in the ♀ darker. Canada, New York.

M. columbiana *Sm.* (27 f) is very similar to the preceding, but the markings are partly bordered with white and the central area is less irrorated with black. Described from British Columbia.

M. deceptiva *McD.* is extremely similar to *columbiana*, of a more robust structure, without the dark and light irroration before the undulate line, and the hindwing is of a much darker colour, quite brownish-black, feebly lighter at the anal angle. The colour is very similarly bluish-green as in the likewise very similar *Feralia jocosa* (27 f), with intense black, white-edged markings. The genital organ differs very much from the two species mentioned. Expanse of wings: 42 mm. Vancouver (British Columbia).

M. februalis *Grt.* (27 f) resembles *columbiana*, but all the black markings are finer, the transverse lines more coherent. Hindwing whitish with a slight, in the ♀ more intense greenish tinge; the ♀ forewing exhibits a more yellowish-green colour and more intense black markings. California.

- brillians.* **M. brillians** *Barnes* (27 f) is emerald-green, in the central area darker irrorated, the markings incoherently composed of rather large black, white-edged spots, the undulate line coherent white, dentate, with black sagittae in front of it and a reddish-brown spot behind it at the anal angle. Hindwing white, towards the margin tinted greenish. Arizona.
- sylvia.* **M. sylvia** *Dyar* (27 e). Here the white colour is more widely spread; otherwise very similar to the preceding, the colour being more a bright grass-green, the black spots larger, more isolated, the undulate line in some places interrupted. Hindwing diaphanous white with a silky lustre, with a slight greenish tinge only at the apex. Arizona and Mexico.
- annadora.* **M. annadora** *Dyar* is very similar to *sylvia* (27 e), more extensively green, the black discal area very broad, behind and below the reniform macula and at the hindmarginal vein, only distally narrowly bordered with white, proximally not at all; the small ring-macula is green, the reniform macula large, quadrangular, strangulated, with a white crescent in the centre. Smaller than the preceding, expanse of wings: 36 mm. Mexico (Tehuacan) in August.

26. Genus: **Brachionycha** *Hbn.*

This genus being also represented by 2 well-known species in the palearctic region, is distinguished by a stunted proboscis, a long and thickly haired thorax without tufts with a slightly keel-shaped centre of the collar and a long bent claw at the end of the anterior tibia: ♂ antennae pectinated; cf. also Vol. III, p. 121. In America represented only by one species:

- borealis.* **B. borealis** *Sm.* (27 g) looks entirely like a very black *B. nubeculosus* (Vol. III, pl. 29 h): grey, throughout irrorated with blackish-brown, with black veins, strongly dentated transverse stripes and black-encircled maculae; the ring-macula is narrow and oblong, below the large, above distally produced reniform macula with an arcuate streak. Hindwing brown with darker veins and a large central spot. Canada and Pennsylvania.

27. Genus: **Psaphida** *Wkr.*

Distinguished from the preceding genus by the well-developed proboscis, the thorax being clad with rough scales, small tufts on the first rings of the abdomen, and the tarsi covered with hair. Only 4 North American representatives are known.

- resumens.* **P. resumens** *Wkr.* (= *viridescens* *Wkr.*, *muralis* *Grt.*) (27 g). Forewing on the whitish ground irrorated with blackish-brown and olive-green, with a black basal ray and one or several anal rays, double transverse lines and whitish maculae, the ring-macula united with the coniform macula, the whitish undulate line is irregularly dentate, the fringes are speckled. Hindwing brownish-grey, towards the margin darker. Distributed in the United States from New York to Texas and Florida.
- grotei.* **P. grotei** *Morr.* (27 g) is very similar to *resumens*; the black basal ray bends backward and terminates close at the hind-margin; the lower part of the coniform macula only extends to the anterior transverse line, whilst in *resumens* it cuts it; at the hind-margin near the posterior transverse line extensively irrorated with white. Hindwing lighter, almost white with a transverse line of dots and a subterminal band. The ♀ has a more contrasting colouring, more black and white. Canada and United States.
- thaxteriana.* **P. thaxteriana** *Grt.* (27 g). Forewing dark brown mixed with greyish-white, in the marginal area of a purer greyish-white; the strong black transverse lines on the averted sides edged with grey, the coniform macula is entirely absent; the undulate line is only marked by the contrast of the colours. Hindwing greyish-brown. United States to Texas. — The reddish-brown larva, with clover-like white subdorsal spots, lives on oak.
- electilis.* **P. electilis** *Morr.* (27 g) has an ash-grey ground-colour and is easily recognised by a broad black stripe from below the base of the cell through the coniform macula to the posterior transverse line; the anterior line is entirely faded, the three maculae are finely surrounded by black, the faded undulate line is blackish. Hindwing light grey. Pennsylvania, Illinois.

28. Genus: **Eutolype** *Grt.*

Very similar to the preceding genera, the proboscis only feebly developed, the palpi straightly porrect, the forelegs as in *Psaphida* with a long claw on the inner side of the anterior tibiae and with hairy tarsi; the thorax is clad with hair-scales and hair and exhibits in front and behind loose tufts, whereas the abdomen has none.

- grandis.* **E. grandis** *Sm.* (27 h). Forewing purple grey, in the basal area and discal area from the median line to the undulate line irrorated with red-brown, both the transverse lines being indistinct, but a median line broad and intensely dark; maculae faded or entirely absent. Hindwing of a subdued reddish brown with a darker postmedian line. Pennsylvania, Missouri.

E. depilis Grt. (= bombyciformis Sm.) (27 g) has grey forewings irrorated with dark brown, with or without a black basal ray and rather indistinct transverse lines; the whitish maculae are centred brown, between them a faint median shadow, the whitish undulate line is proximally shaded with dark. Hindwing brownish, at the margin darker. From New York to Ohio and Texas.

E. rolandi Grt. (= vernalis Morr.) (27 h). Forewing greyish-brown with rather indistinct transverse lines, the broad coniform macula extending to the cell, the large upper maculae only laterally bordered with black, above and below open; instead of the undulate line there are small black sagittae. Hindwing brownish. The ♀ is much darker. Massachusetts, Missouri, Texas.

E. damalis Grt. (27 h) differs from the others by its almost purely bluish-grey ground-colour with a very slight brown hue, all the markings being but very feebly marked. Hindwing white, at the margin slightly irrorated with blackish. From California.

29. Genus: **Copipanolis** Grt.

Separable from the preceding by the thorax being only clad with hair, without any tufts, and by the entirely stunted proboscis. The genus contains but one though most variable species from North America.

C. styracis Gn. (27 h) is a most variable insect, greyish-brown or reddish-brown with or without more or less faded transverse stripes, with or without equally coloured or whitish maculae, an undulate line is hardly ever present. The nomenclatural type is a greyish-brown form with a purely brown central area, the maculae being grey, surrounded by a darker colour. — Very closely allied and perhaps coincident with it is the form **fasciata** Sm. (27 h), a brighter red-brown form, in the basal and marginal areas irrorated with whitish, somewhat greyer maculae, the ring-macula being very small, and with red-brown transverse lines, the posterior line intense, the anterior line more faded. Pennsylvania, New York, Illinois. — **borealis** Sm. (27 h) from Canada is likewise a greyish-brown form with a more reddish-brown central area, without a ring-macula. — **cubilis** Grt. is similar, but with whitish maculae. Range like that of **fasciata**. — The form **stigma** Sm. finally is reddish-yellow, without transverse lines, with yellowish-white small maculae and apparently much smaller, from Florida. — The larva lives on *Styrax*.

30. Genus: **Provia** B. u. McD.

Very closely allied to the two preceding genera from which it differs in its strong proboscis and only ciliated, not pectinate ♂ antennae, and in the absence of the horny terminal plate on the anterior tibia, exhibited by the two others beside the claw. As to the covering of the thorax it resembles *Copipanolis*, whilst the shape of the wings is more like that in *Eutolype*. Only 1 species:

P. argentata B. u. McD. (27 i). Forewing smoky-brown, in the central area somewhat darker, the costal margin and hind-margin irrorated with grey, without transverse lines, but the maculae are intensely prominent, being black with a silvery-white ring, the ring-macula being small, a horizontal oval, the reniform macula large, in the centre somewhat lighter centred, its lower end extended in a bipartite silvery white spot from which a black-striped shadow runs to the apex; the large coniform macula is also silvery white; at the distal margin small white spots. Hindwing whitish, with brown veins, in the ♀ brown. From Utah.

31. Genus: **Epidemas** Sm.

Without proboscis, with short palpi, serrate antennae, and a roughly haired and scaled thorax, in front and behind with loose tufts, the 1st abdominal ring being likewise tufted.

E. cinerea Sm. (27 i). Forewing grey, irrorated with brown and strewn with black, with a black basal ray, double transverse lines filled up with whitish, a long pointed coniform macula reaching to the post-median line, and whitish-ringed upper maculae. Undulate line whitish, crenulate, the marginal area behind it darker. Hindwing light brownish. Washington, Colorado.

E. obscura Sm. (27 i) is similar, more red-brown, the coniform macula much shorter, the transverse lines much more indistinct, only the posterior line double, not filled up with whitish, instead of the undulate line with dark internerval dots. Washington.

E. melanographa Hmps. (27 i) has greyish-white forewings in some places irrorated with blackish-brown, the black basal ray above somewhat scaled ochraceous-yellowish, the black transverse lines on the sides bordered with white; the maculae are white, surrounded by black, between them an intense black median shadow; before the white undulate line there are black sagittae. Hindwing light brown. Described from Canada (Vancouver).

32. Genus: **Bombycia** *Stph.*

Proboscis developed, eyes comparatively small, antennae pectinate, thoracal covering like in the preceding genus, anterior tibia without a claw at the end. The abdomen exhibits small tufts on the first rings. Cf. also Vol. III, p. 122.

curvifascia. **B. curvifascia** *Sm.* (27 i). Forewing brownish-grey with a black basal ray, indistinctly double transverse lines with vein-streaks behind the distal line, and whitish maculae, an elliptic ring-macula, the reniform macula produced on the median towards the base, the whitish undulate line proximally bordered with brown. Hindwing light brown with a dark subterminal band. California.

thula. **B. thula** *Streck.* has light brown forewings intensely suffused with black, with a black basal ray and black transverse lines being bordered with a yellowish-grey on the averted sides; the maculae are very large, of the ground-colour, in grey rings and surrounded by black; the undulate line consists of small grey spots with black sagittary streaks before them. Hindwing blackish-brown. Expanse of wings: 25 mm. Canada.

elda. **B. elda** *French* (27 i). Forewing brownish-grey, in some places irrorated with brown, with a black basal ray and a white spot above it, the transverse lines edged with whitish, the anterior line being double, and with whitish maculae irrorated with brown; before the whitish undulate line brown irroration. behind it at the anal angle a blackish-spot. Hindwing light brown, towards the margin darker. California.

rectifascia. **B. rectifascia** *Sm.* (27 k) has more bluish-grey forewings, at the costal base and in the reniform and coniform maculae irrorated with ferruginous reddish, with double transverse lines filled up with whitish, and an intense black median line, a somewhat lighter subterminal area, before the undulate line irrorated with reddish-brown. Hindwing dingy white, veins and margin brownish-grey. California.

onychina. **B. onychina** *Gn.* is very similar to the palearctic *viminalis* (Vol. III, p. 122, pl. 29 i, k); it is greyer, with a much larger ring-macula, a reddish-tinted reniform macula; instead of the undulate line there are 3 large, quadrangular, dark spots at the costal margin, in the centre of the distal margin and at the anal angle. United States. — The larva is grey, watered with red-brown, with black V-spots on the dorsum, and a broad white lateral line hued with reddish. It lives on *Chamaecistus*.

33. Genus: **Brachylomia** *Hmps.*

Similar to the preceding genus, but with still smaller, somewhat reniform eyes and a prepensorately scaled thorax with tufts in front and behind; the ♂ antennae are serrate; the abdomen exhibits a tuft only on the first ring, on the others lateral hair-tufts. The forewing is short and broad. — The genus is purely American.

populi. **B. populi** *Streck.* (27 i) is rather a common species and very variable. Forewing greyish-white, thickly strewn with black and in some places irrorated with orange-brownish, in the same way the transverse lines are bordered, the anterior line being almost straight; maculae of medium size. Hindwing light reddish-

albidior. brown. — ab. **albidior** *Strd.* (= ab. 1 *Hmps.*) (27 k) is more white, very scantily orange-scaled, with an ex-

contrast. tinct blackish median band, and whiter hindwings. — ab. **contrast** *Strd.* (= ab. 2 *Hmps.*) has scarcely orange scales, the basal half is blackish, defined towards the white distal half by a distinctly marked black median band. Canada to Colorado.

discolor. **B. discolor** *Sm.* (27 k). Forewing ochre-yellowish, in some places strewn with black; transverse lines single, black, the posterior line hardly curved near the reniform macula; macula ochreous, dark-centred; postmedian area almost black, the undulate line itself black, interrupted. Hindwing whitish, at the margin brownish. New Mexico.

34. Genus: **Litholomia** *Grt.*

Separated from the preceding genus by the admixture of hair on the thorax and a tuftless abdomen. The eyes are likewise small, but round; ♂ antennae ciliated. Only 1 species:

napaea. **L. napaea** *Morr.* (27 k) has grey forewings strewn with blackish-brown, with black, double, crenulate transverse lines, between the white-ringed maculae with a blackish-brown median line; the white undulate line is on the proximal side darkened by blackish-brown. Hindwing brownish-grey. Canada to California. — **umbrifasciata** *Blackmore* (33 h) has the central area behind the median line darkened in the shape of a band. British Columbia.

35. Genus: **Hillia** *Grt.*

Like the preceding genus, but beside the tufts on the prothorax and metathorax also with hair-tufts on the frons and vertex, as well as on the shoulders. The eyes are larger. American, except *H. iris* living also in the palearctic north.

H. discinigra Wkr. (28 a). The grey forewing is irrorated with blackish-brown from the base to the undulate line; the transverse line is rather indistinct, a little bordered with grey, the maculae in grey rings; the whitish undulate line is proximally irrorated with dark, behind it the veins are darkened. Hindwing greyish-brown. Canada.

H. algens Grt. (27 k). Forewing brownish-grey with blackish, crenulate transverse lines and black and white vein-streaks behind the distal line, the maculae in grey rings, the ring-macula obliquely elliptic, in the reniform macula often some orange scaling; behind the grey, brown-edged undulate line at the anal angle a blackish spot. Hindwing brownish-grey. Canada to Colorado.

H. iris Zett. (= erasis *H.-Schäff.*, semisigna Wkr., erdmanni *Mschlr.*, senescens Grt.) is a species also distributed in the palearctic region (cf. Vol. III, p. 123, pl. 28 d). Forewing reddish-brown, strewn with whitish, particularly on the veins, with rather indistinct transverse lines, the maculae surrounded by an intense black, the ring-macula above and below open; the undulate line consists of white dots proximally bordered with red-brown. Hindwing of a yellowish-grey colour. As to the variability cf. the palearctic part. — **f. vigilans** Grt. is a deep red-brown form with a contrastingly white reniform macula, the undulate line being distally bordered with an intense white colour, the cell filled up with black before and between the maculae. Labrador, Canada down to New York.

36. Genus: **Dryotype** Hmps.

Separated from *Litholomia* by a feeble rough frontal projection, pectinate ♂ antennae and several small tufts on the first abdominal rings. Only 1 species:

D. opina Grt. (28 a) is on the purple brown forewing strewn with grey with single transverse lines being double only at the costal margin, the posterior line distally bordered with purple red; maculae irrorated with whitish and surrounded with black; the undulate line consists of small ochreous lunae, proximally with small black sagittary spots with a W below the centre. Hindwing whitish, at the margin brownish, in the ♀ darker. From California.

37. Genus: **Lithomoia** Hbn.

This genus contains but one species, being also distributed and well-known in the palearctic region, with long, narrow wings, a smooth frons, with finely serrate ♂ antennae; the thorax is chiefly covered with scales, in front and behind with tufts, the rough-haired abdomen with a tuft on the first ring, towards the anus laterally covered with hair.

L. solidaginis Hbn. (cf. Vol. III, p. 124, pl. 30 e). The American forms of this species exhibit a genital organ somewhat different from that of the European forms, the uncus being narrower, also the valves of a different structure, but the northern forms from Alaska and British Columbia are in this respect somewhat more similar. — **f. albertae** Strd. (= morrisoni *B. & Benj.*), from Alaska and Canada, is marked like European specimens, but the forewing and hindwing are much darker, particularly the latter specimens from British Columbia have also blackish-brown hindwings, but the forewing is lighter, but generally the central area is darker. — **f. germana** Morr., from the Eastern States up to British Columbia on the whole resembles European specimens more, but the forewing is of a brighter colouring, and the markings, particularly the anterior transverse line, is more distinctly marked, the hindwing is light. New York, Ottawa, Ontario; Californian specimens form the transitions to them. — The beautiful, red-brown larva with a yellow lateral stripe lives on species of *Vaccinium*.

38. Genus: **Graptolitha** Hbn.

A large, also palearctic genus with narrow-winged species with a straight distal margin. Proboscis developed, eyes large, frons smooth. The thorax is covered with hair and hair-like scales, the frons and vertex with minute hair-tufts, the collar with a slight central keel, on the prothorax with a parted tuft, metathorax with a loose tuft; abdomen flat with dorsal tufts on the first rings, and laterally hairy (cf. also Vol. III, p. 124, where the genus is united with *Lithophane* Hbn., the latter, however, has not a flat abdomen).

G. semiusta Grt. (28 a). Forewing on the light grey ground irrorated with a bright red-brown colour, with dentate transverse lines being on the averted sides bordered with greyish-white, behind the distal line with black and white vein-streaks and with whitish-ringed maculae; before the whitish undulate line red-brown shading. Hindwing blackish-brown with whitish fringes. Canada to New York.

G. bethunei Grt. & R. (28 a) is much paler, more whitish, with double, crenulate transverse lines, which are connected on the submedian fold by a black streak; the maculae are surrounded by orange-brown, behind the distal transverse line with a double row of vein-dots; the whitish undulate line is proximally

bordered with orange-brown, with a distinct W below the centre, behind it dark vein-streaks. Hindwing brownish-grey. Canada to New York.

patefacta. **G. patefacta** *Wkr.* (28 a) is very similar to the preceding, but greyer with more faded markings. single transverse lines, between them a black spot on the submedian fold. Hindwing darker brownish-grey. Canada.

innominata. **G. innominata** *Sm.* (= *signosa* *Grt.* nec *Wkr.*) (28 a) is likewise similar, but deeper red-brown with a prominently yellowish-white costal stripe, otherwise in the marking very similar to the preceding. Hindwing dark reddish-brown. Canada to Colorado.

hemina. **G. hemina** *Grt.* (28 b). Forewing greyish-brown with a black basal ray with blackish spots between the macula on the submedian fold between the double crenulate transverse lines and in the marginal area at the anal angle and below the apex; the maculae are pale, surrounded by brownish. Hindwing greyish-brown. Canada; Northern and Eastern States.

oriunda. **G. oriunda** *Grt.* (28 b) is a smaller species with purple-reddish forewing with prominently whitish costal stripe and maculae, and with a black, white-edged basal ray; transverse lines indistinct, single, behind the distal line black and white double dots; the undulate line consists of small white spots. Hindwing red-brown. Canada. Wisconsin.

disposita. **G. disposita** *Morr.* (28 b) looks very much like *hemina*. it is much lighter brownish-grey, in some places tinted reddish-brown, the maculae surrounded by an intense black colour, the basal ray being thicker. Hindwing paler. Canada. United States to New York.

ferrealis. **G. ferrealis** *Grt.* (28 b). Forewing dark red-brown, in the costal-marginal area and at the base of the hind-margin greyish-white, before and behind the strongly dentate transverse lines with black and white vein-dots; maculae surrounded by greyish-white or yellowish-white; the undulate line consists of small yellowish-grey angular spots with black veins of the marginal area behind them. Hindwing reddish-brown. Canada. Maine; New York.

petulca. **G. petulca** *Grt.* (28 b) has whitish-grey forewings irrorated with red-brown, with double dentate transverse lines and double dots behind them, connected on the submedian fold, and with light-ringed maculae; before the rather indistinct light undulate line with red-brown sagittary spots. Hindwing brownish-grey with reddish fringes. North-Eastern States.

signosa. **G. signosa** *Wkr.* (28 c) is similar to *petulca*, more greyish-brown, the veins striped darker, below the maculae with a darker spot. Hindwing lighter. Canada; North-Eastern States.

gausapata. **G. gausapata** *Grt.* is somewhat similar to *ferrealis* (28 b), but without its light costal area, on the dark red-brown ground somewhat irrorated with grey, the transverse lines bordered with whitish, the reniform macula is a ferruginous patch. Hindwing dull brownish-red. California.

contra. **G. contra** *B. & Benj.*: is most closely allied to *gausapata*, but it differs from all in the posterior transverse line being only represented between the lower median branch and the submedian fold as a short, double, white-centred piece followed by a brownish-black spot. Ground-colour violettish-grey, irrorated with brown; anterior transverse line double, maculae quite extinct, the undulate line marked as a reddish-brown shadow. Hindwing brownish-grey with darker veins and central spot. Expanse of wings: 47 mm. Arizona.

amanda. **G. amanda** *Sm.* (28 c) is similar to *signosa*, lighter whitish-grey, the cell and the space behind it ochre-yellowish, below and behind the maculae darkened by brownish-black; the ring-macula is marked by a whitish ring, the reniform macula by a red-brown dot in the lower cell-angle with a black and white arcuate line below it; instead of the undulate line there are small red-brown sagittary spots. Hindwing yellowish brownish-grey. Canada; United States to California. — ab. **pallidior** *Strd.* (= ab. 1 *Hmps*). is lighter, without the blackish-grey discal patch, the hindwing only darkened in the marginal area.

longior. **G. longior** *Sm.* (28 c) has more bluish-white forewings only slightly irrorated with brown, similarly marked as the preceding, with less distinct transverse lines bordered with white, submedianly connected, the large maculae whitish with black streaks below and behind the reniform macula, obliquely to the apex continued in a darker shadow. Hindwing greyish-brown. Colorado.

contenta. **G. contenta** *Grt.* (= *pomona* *Sm.*) (28 b) is similar, more violettish-grey, with a slight brownish tinge, the veins striped darker, the transverse lines very deeply dentated; in the whitish ring-macula there are black dots, instead of the reniform macula there is a flesh-coloured reddish patch irrorated with greyish-black, and a black streak below it; instead of the undulate line there are dark sagittary spots. Hindwing reddish-brown. Washington. California.

baileyi. **G. baileyi** *Grt.* (28 c). Forewing brownish-grey, often with a greenish tint, with a black, white-edged basal ray, double crenulate transverse lines, and large maculae surrounded by black, the reniform macula centred hemochrome, between them with a faded median shadow; the undulate line consists of small black spots. Hindwing brownish-grey. Canada. United States (New York. Albany).

G. vivida Dyar (28 c) is somewhat similar to *baileyi*, with brighter markings, the forewing whitish-grey particularly in the basal area and the maculae, as well as subterminally, otherwise irrorated with blackish. Hindwing blackish-brown. Expanse of wings: 37 mm. British Columbia.

G. viridipallens Grt. (28 d) is light greyish-green with double undulate, not crenulate transverse lines, a blackish faded median shade, the maculae surrounded by black, the ring-macula being reniform and above and below open; undulate line darker. Hindwing greyish-brown with white fringes. Massachusetts.

G. pruenae Dyar is similar to *viridipallens* Grt. (28 d), less green, more steel-bluish grey, the double transverse lines rather inconspicuous, between the two reniform maculae a black shadow; base of costal margin whitish, the undulate line shows darker spots. Hindwing greyish-brown. Expanse of wings: 40 mm. Texas.

G. puella Sm. (28 d) is a larger whitish-grey species with a black basal ray and blackish irroration, the base of the costal margin white, double transverse lines being almost straight, little dentate; the light maculae show a slight yellowish or reddish tint, the ring-macula reaching far downward, the reniform macula proximally produced on the median, between both a faded median shadow; instead of the undulate line there are small dark sagittae. Hindwing yellowish-brownish-grey. California.

G. querquera Grt. (28 e). Forewing greyish-green with a black basal ray, double transverse lines and an intense black median shadow; the maculae are laterally surrounded by black, the reniform macula is centred brown; the undulate line consists of small black sagittae. Hindwing brownish-grey. New York. Missouri.

G. unimoda Lintn. (28 d) has violettish-grey forewings irrorated with a brownish grey, with rather indistinct transverse lines, the anterior line double, filled up with grey, the posterior line single, distally bordered with grey, crenulate; ring-macula whitish, above open, below distally with a bent streak, reniform macula in a grey ring; before the whitish undulate line there are small dark sagittae. Hindwing light brown. Canada: Northern and Eastern States (New York).

G. laticinerea Grt. (28 d). Forewing dark greyish-brown, strewn with white, with a black basal ray above bordered with white, with indistinctly double transverse lines filled up with greyish-white, and grey-ringed maculae, the ring-macula elliptical, connected with a similar spot below the cell, the reniform macula proximally produced, before the grey undulate line with small dark sagittae. Hindwing reddish-brown. Canada: North-Eastern States.

G. winnipeg Sm. is very similar to the two preceding species, but the ground-colour is decidedly dark bluish-grey without the greenish tint of *laticinerea*. Expanse of wings: 46 mm. Atlantic States.

G. antennata Wkr. (= cinerea Riley) (28 e) is somewhat like *laticinerea* (28 d), smaller on an average, more violettish-grey, at the base of the costal margin more whitish-grey, the reniform macula pupilled reddish, behind it the subterminal area is somewhat lighter. Hindwing light brown. Canada and North-Eastern States. — The larva is green with narrow white dorsal lines and a broad white lateral stripe.

G. cinerosa Grt. (= grotei Riley) (28 d) is also like *laticinerea*, but it has broader wings, a purer grey colour, coarsely strewn with black, the other marking quite similar. Hindwing yellowish-brown. Canada and North-Eastern States. — Larva green with equally broad white dorsal and lateral stripes; it lives on maple and other deciduous trees.

G. georgii Grt. (28 e) is a most variable insect. Forewing bluish-grey, irrorated with greyish-brown, with a black basal ray and strongly dentate transverse lines and maculae of the same shape as in the preceding, the ring-macula connected with a spot below it, the reniform macula proximally produced, before the black veins of the marginal area minute black sagittae of the undulate line. Hindwing reddish-brown. Canada. Northern and Eastern States. — The form **emarginata** Sm. (28 f) has very indistinct spots of the undulate line. Colorado. — **holocinerea** Sm. (28 c) is somewhat darker brownish-grey with a distinct median shadow between the maculae. Canada to California. — **ancilla** Sm. (28 f) entirely resembles the preceding form, but it is lighter bluish-grey, at the base of the costa and in the subterminal area still somewhat lighter. From Canada. — **vertina** Sm. (28 e) is somewhat more contrasting, more variegated, owing to the reniform macula being pupilled reddish-brown, the median shadow continued to the hind-margin (whilst in the preceding it is only confined to the cell), the posterior transverse line quite indistinct. Canada, Oregon. — The form **fletcheri** Sm. (28 g) is distinguished by its small indistinct ring-macula without the usual spot below it. From Ottawa. — **oregonensis** Harv. (28 f) has a much lighter whitish-grey ground-colour with a slight bluish tint, being the lightest at the base of the costa and in the subterminal area, the reniform macula being centred red-brown. Hindwing lighter brownish. Oregon, Colorado, California. — The green larva with narrow interrupted white dorsal, subdorsal and lateral stripes lives on oaks.

G. fagina Morr. (28 g). Forewing light violettish-grey, strewn with brownish, in the costal area whitish with finely black-striped veins, without a basal ray, with strongly dentate, submedianly connected transverse lines, with almost extinct maculae; failing them with short black streaks; instead of the undulate line small black sagittary spots. Hindwing yellowish-brown, veins and marginal area darker. North-Eastern States (Maine, Massachusetts, New York).

- itata*. **G. itata** Sm. (28 g). Forewing quite light greyish-white with entirely extinct markings, a median shadow between the maculae, the ring-macula oblong-elliptical; the undulate line is only marked by short triangular shadows at the costal margin and anal angle. Hindwing brownish-grey with darker veins. Colorado.
- nigrescens*. **G. nigrescens** Engel is one of the finest species, on the forewing light olive-grey, intensely marked deep black, particularly in the basal area, between the maculae, which are exactly shaped as in *tepida* (28 g), and in the whole area below the cell as far as the undulate line, only interrupted by a red-brown basal spot at the hind-margin, and the very narrow red-brown coniform macula. Pennsylvania.
- merceda*. **G. merceda** Sm. (28 f). Forewing purple grey with brown irroration, in the costal area more whitish with a black basal ray and dentate transverse lines, the whitish ring-macula connected with a similar spot below it, the reniform macula proximally produced; before the whitish undulate line small black sagittae. Hindwing light brownish. Canada.
- tepida*. **G. tepida** Grt. (28 g). Forewing on the greyish-white ground irrorated with brownish-grey, in the basal area of a purer whitish-grey, the basal ray above bordered with ferruginous brownish; anterior transverse line double, posterior line crenulate and single, and between them a faded median shadow; the maculae are whitish and surrounded with black, in the reniform macula below somewhat rusty-red; before the whitish-spotted undulate line there are small black sagittae. Hindwing greyish-brown. Northern and Eastern United States (Massachusetts, New York, Albany). — The form **atincta** Sm. (28 h), from Canada, is darker brownish-grey.
- atincta*. **G. torrida** Sm. (28 i) is similar to the form *atincta*, darker violettish or bluish grey, very similarly marked, but below the ring-macula with a distinct second ring, more intensely mixed with dark ferruginous scales, the undulate line more coherently whitish-grey. Hindwing brown with white fringes. From Canada to Colorado and California. — The green, narrowly white-striped larva on the wild cherry.
- torrida*. **G. laceyi** B. & McD. (28 k) is so similar to *puella* Sm. that they may be the same species. Forewing grey with a lighter grey spot at the base of the costal margin, with a black basal ray and distinctly marked, crenulate, double transverse lines; the ring-macula with a ring below it 8-shaped, the reniform macula on the median proximally produced, before the grey undulate line with distinct small sagittae. Hindwing smoky-grey, towards the base somewhat lighter. Described from Texas.
- laceyi*. **G. pexata** Grt. (28 h). Forewing blackish-brown, strewn with grey, the basal ray above bordered with yellowish-white, purple reddish scales at the base of the hind-margin and in the lower end of the reniform macula; transverse lines double, submedianly connected by black; the light reddish undulate line is proximally bordered with brown, analwards with a whitish spot. Hindwing brown with reddish fringes. Canada, North-Eastern and Central States. — The form **washingtonia** Grt., from Washington, is darker, more blackish.
- pexata*. **G. dilatocula** Sm. (28 h) is much larger and of more contrasting colours, more blackish-brown, in the central, postmedian and marginal areas irrorated with purple grey, the maculae are very large, purple grey, the ring-macula is round, in a ferruginous ring, the reniform macula distally ferruginous; the grey undulate line is proximally bordered with brown. Hindwing of a reddish brown, with a dark central luna, a bent transverse line behind it, and a faded marginal band. Washington, California.
- washingtonia*. **G. nasar** Sm. Allied to *lepida* (28 g) and *thaxteri* (28 h). Forewing of a bright pure bluish grey with distinct markings and red-brown irroration in the reniform macula; the black basal ray is above and below bordered with whitish, the black transverse lines are edged with grey, connected by 2 long teeth opposing each other on the submedian fold; the sharply dentate undulate line exhibits in the lower half a W almost as far as the distal margin, with black sagittary rays before it. Hindwing greyish-brown, with a coppery reflection. Expanse of wings: 36 to 38 mm. Arizona.
- dilatocula*. **G. atara** Sm. is very similar to *nasar*, larger, without any brown or reddish tints, of more subdued colours and with a faded, not so distinct marking; before the W of the undulate line the black rays of *nasar* are absent. Hindwing more whitish, also with a slight coppery reflection. Expanse of wings: 38 to 40 mm. Arizona.
- nasar*. **G. lepida** Lintn. (28 g) has violettish-grey forewings irrorated with brownish, the black transverse lines are on the averted sides bordered with grey, the reniform macula is strangulated, on the median proximally produced, the ring-macula is obliquely elliptical. The undulate line consists of small blackish lunae. Hindwing reddish-brown. Canada, Maine, New York.
- lepida*. **G. thaxteri** Grt. (28 h) is the American representative of the palearctic *lunda* F. (cf. Vol. III, p. 125, pl. 30 i) and very much like it; forewing of a clear violettish grey, in some places shaded with a brownish grey, distinctly marked, with a thick black, upwards faded streak connecting the transverse lines, and reddish-brown irroration in the lower end of the reniform macula, which is open towards the median shadow obliquely entering it; undulate line with black teeth above the centre and subanally before it. Hindwing coppery brownish with white fringes. Canada, United States to New York.
- thaxteri*.

39. Genus: **Xylena** O. (*nom. nud.*).

This genus contains some rather large representatives which are very closely allied to the preceding genus and chiefly only differ in the absence of the small parted tuft on the prothorax, and of the tuft on the first abdominal ring. As to the genus see also Vol. III. p. 127.

X. nupera *Lintn.* (28 k) is very much like the palearctic *vetusta* (Vol. III. p. 127, pl. 31 c). Forewing *nupera*, light ochre-brownish, in the hindmarginal half darkened by red-brown, the surroundings of the median vein irrorated with greyish-white, with an intense black basal ray, dentate, mostly indistinct transverse lines, the coniform macula composed of 2 black streaks, and the reniform macula being rather large, irrorated with reddish-brown, between the latter and the undulate line a strong black longitudinal streak. Hindwing brownishred. Canada, United States, to the south as far as Colombia; Nebraska, Massachusetts. — The larva is apple-green, more rarely brown, with a narrow whitish lateral stripe, which is above bordered with black, and orange-red stigmata; on low plants.

X. mertena *Sm.* (28 i) is somewhat similar, but much smaller, in the costal half yellowish, irrorated *mertena*, with red-brown, below it smoky grey; in the cell a blackish patch in which the ring-macula is finely surrounded by dark like the reniform macula which is light-centred, distally irrorated with red-brown which colour expands more or less far towards the margin; the posterior transverse line mostly only consists of vein-dots. Hindwing reddish brownish-grey. Expanse of wings: 43 to 50 mm. Canada; Washington; Seattle.

X. curvimacula *Morr.* (29 a) differs from the preceding in the light costal colour being confined to *curvimacula*, the apical third, the wing being much more extensively irrorated with red-brown; the anterior transverse line is double, in the cell even treble and very strongly dentate; the reniform macula is a yellowish narrow crescent; the posterior transverse line consists of a double row of vein-dots with a dentate line between them. Hindwing yellowish greyish-brown. Canada to New York and Oregon. — The larva is greenish-brown, with a darker chessboard-like marking, with a whitish, brown-edged dorsal line; on low plants.

X. brillians *Ottol.* (28 h). Forewing bluish-grey, irrorated with brown, with a yellowish patch between *brillians*,] the centre of the reniform macula and the margin, and with reddish irroration above it as far as the undulate line; anterior transverse line double, posterior line single dentate, with vein-dots behind it; maculae in grey rings and surrounded by black, distally at the reniform macula scaled red; the undulate line consists of small dark sagittary spots with a stronger black one to the reniform macula. Hindwing reddish-brown. Maine, New Hampshire.

X. cineritia *Grt.* (28 i) is similar, more brownish-grey, in the central costal-marginal half irrorated *cineritia*, with red-brown, the transverse lines as in *curvimacula* (29 a) just like the maculae; the undulate line is whitish, proximally shaded with brown, with a strong black sagittary ray to the reniform macula; the veins of the marginal area are marked black. Canada to Colorado.

X. thoracica *Putman-Cram.* is extraordinarily similar to the preceding on the wings, but it is easily *thoracica*, discernible by the lighter brownish-grey thorax which is blackish-brown in *cineritia*. Northern United States.

X. brucei *Sm.* (28 i) entirely resembles the palearctic *exoleta* (Vol. III, p. 127, pl. 31 d), but it is smaller *brucei*, on an average and of a greyer colour; the ring-macula is smaller and narrower and is nearer to the reniform macula, the ground between both is darkened by blackish, whilst behind the reniform macula it is not darkened. Hindwing dark brownish-grey. Colorado.

40. Genus: **Behrensia** *Grt.*

Distinguished from the preceding by the thorax being clad with rough scales, with loose tufts on the prothorax and metathorax. The abdomen exhibits quite a series of tufts of which that on the 2nd ring is particularly large and fan-shaped; at the antennal base there is a tuft of hairs. Only 1 species:

B. conchiformis *Grt.* (28 i) has greyish-white forewings irrorated with brown and strewn with black, *conchiformis*, with small golden green spots in the basal area, behind the distal transverse line, before the distal margin and sometimes in the centre of the costal margin; median area darkened by blackish-brown, edged by strong double black transverse lines; the hitish maculae are centred brown, between and below them a spot of whitish irroration; the undulate line consists of small whitish sagittary spots. Hindwing reddish-brown. discally whitish, with a greyish-brown marginal band. Washington; California.

41. Genus: **Xylotype** *Hmps.*

Very closely allied to the preceding genus, the hair-tuft at the antennal base is absent; of the abdominal tufts that on the 3rd ring is the largest.

X. capax *Grt. & R.* (28 k). Forewing purple grey, irrorated with red-brown, the transverse lines *capax*, on the averted sides bordered with grey, between both on the submedian fold a black streak; maculae large,

below intensely marked black; the whitish undulate line is distally irrorated with black, with a strong black anal streak behind it. Hindwing greyish-brown. Canada, Eastern and Central States as far as Colorado.

arcadia. **X. arcadia** *B. & Benj.* is similar, but smaller, much lighter whitish grey with more distinctly double transverse lines filled up with white; the ring-macula is more oblique, the reniform macula is below broader, so that both are below almost fused, in the ♀ entirely fused. The insect looks almost like *Anytus privata* (pl. 12 b). Expanse of wings: 35 to 40 mm. Described from Nova Scotia.

42. Genus: **Eurotype** *Hmps.*

Likewise very closely allied to the preceding genera, but the thoracal scales are intermixed with hair. Of the abdominal tufts none is particularly large. Only 2 species:

anceps. **E. anceps** *Steph.* (= *polymita Steph.*, *acutissima Grt.*). Forewing whitish with brown irroration, in the central area browner irrorated with a black basal ray, black, white-edged, strongly dentate transverse lines which are submedianly connected by a prolongation of the coniform macula, and with large, white-ringed maculae with black longitudinal streaks from the reniform macula to the posterior transverse line; before the white undulate line there are small black sagittary spots. Hindwing brownish-grey. Canada, New York. — *confragosa.* The form **confragosa** *Morr.* (= *medialis Grt.*) (29 b) exhibits a less strongly dentate double posterior transverse line. Canada.

contadina. **E. contadina** *Sm.* (28 k) has serrate antennae (the ♂ of the preceding has short pectinate antennae); forewing very similarly marked as in the preceding, but the ring-macula is smaller and on all sides surrounded with black, in the preceding above open, more V-shaped. Hindwing somewhat lighter greyish-brown. From British Colombia.

43. Genus: **Pleroma** *Sm.*

The palpi are in front much longer haired than in the preceding genera, the insects are on the whole much more hairy, the thorax is clad with hair and hair-like scales, the collar is in the centre raised somewhat in the shape of a keel; prothorax and metathorax do not exhibit any tufts, the abdomen is only tufted on the first rings, instead of it laterally longer haired.

apposita. **P. apposita** *Sm.* (28 k) is so closely allied to the following *conserta* that HAMPSON in his catalogue united them; according to the kind information of Mr. BENJAMIN, it is perhaps a distinct species, but probably merely a form of the following with less distinctly marked transverse lines and with intense black suffusion on the forewing. British Columbia: Alberta.

conserta. **P. conserta** *Grt.* Forewing black, in the basal and costal areas irregularly irrorated with white, interrupted by the broad faded beginnings of the transverse lines which are extinct in the other part of the wing; reniform macula and the small spots of the undulate line are likewise white, also the fringes are speckled with white; hindwing greyish-brown. Canada; United States (Washington).

bonuscula. **P. bonuscula** *Sm.* (29 a) has grey, black-strewn forewings, irrorated with white in the costal-marginal area and with black-striped veins; the extinct and rather indistinct transverse lines are confluent towards the hind-margin; the reniform macula is a small dark luna; the undulate line is represented by white dots on small blackish sagittary spots, towards the anal angle there is a rather long white stripe on both sides bordered with black. Hindwing greyish-brown. Colorado.

obliquata. **P. obliquata** *Sm.* (29 a) is similarly marked, more bluish-grey, thickly strewn with black; the transverse lines are strong, not united towards the hindmargin, at the anal angle the white stripe of *bonuscula* is absent, Hindwing lighter brownish-grey. Colorado, California. — f. *smithi* *B. & Benj.*, from Utah, is lighter coloured, of a purer grey, with more distinctly prominent markings, also the veins being deeper black. Hindwing blackish-grey, without brown tints.

arizonata. **P. arizonata** *B. & Benj.* is similarly marked as the following *cinerea*, but larger, coloured as *obliquata* (29 a), in the subterminal area somewhat darker with a white, above black-bordered stripe on the submedian fold between the posterior transverse line and the undulate line; the ring-macula is a small light diffuse spot, the reniform macula is a small faded dark luna. Hindwing smoky grey. Expanse of wings: 39 mm. Arizona.

cinerea. **P. cinerea** *Sm.* (29 a) is on the bluish-white ground strewn with brown, with fine black veins; the anterior transverse line is very much distally angular on the median vein, and proximally angular on the submedian fold, otherwise extinct; the apex is parted by a brownish nebulous patch in which there are blackish strigiform spots; above the anal angle a white stripe bordered with black. Hindwing light brown, on the veins and margin darker. Oregon; California.

44. Genus: **Daseuplexia** *Hmps.*

In this otherwise purely Indian genus (cf. Vol. XI, p. 110) also a tropical American species has been inserted; the broad quadrangular scaled thorax exhibits in front a bipartite tuft, behind loose tufts; the abdomen exhibits a row of tufts on the first rings, whilst on the last rings it is laterally set with hair. The apex of the forewing is somewhat produced, the margin is crenulate. Otherwise entirely as in the preceding genera.

D. lichenifera *Drc.* (33 h). Head, palpi, and collar green, the collar with a black transverse line, thorax *lichenifera*. grey intermixed with green and brown hairs, the first 3 abdominal tufts green. Forewing grey, at the costal margin and apex darkest, strewn with small black dots, and with 2 broken green transverse bands in the centre; distal margin and hind-margin and an extrabasal line light green. Hindwing brownish-white, at the margin darkened, with a black discal spot and with an antemarginal row of brown spots. The ♀ is darker, otherwise marked the same. Expanse of wings: 35 to 37 mm. South East Peru.

45. Genus: **Meganephria** *Hbn.*

In the structure entirely like the preceding genus, but the prothorax exhibits no bipartite, but a plain loose tuft. The genus otherwise contains only a series of palearctic i. e. oriental species. Cf. Vol. III, p. 128.

M. araucanica *Hmps.* has lilac-white forewings, which are in some places, particularly much in the *araucanica*. median area in the disc and analwards, irrorated with red-brown, with a black, golden-scaled and above white-edged basal ray, black transverse lines bordered with white on the averted sides; all the 3 maculae are large, surrounded by black, the reniform macula distally white-spotted; the white crenulate undulate line is on both sides shaded somewhat with red-brown, the veins behind it and some internerval rays are black. Hindwing yellowish-brown with a large central spot, an undulate line behind it, and 2 extinct crenulate antemarginal bands. Expanse of wings: 46 mm. Southern Chile.

46. Genus: **Pachypolia** *Grt.*

Distinguished by a parted keel-shaped tuft on the scaled prothorax, otherwise like the preceding. ♂ antennae with rather long double pectinations. Only 1 species:

P. atricornis *Grt.* (29 a) has grey forewings irrorated with brown and strewn with black, with a darker *atricornis*. central area, a black basal ray above bordered with white, double crenulate transverse stripes being filled up with whitish and connected by a black prolongation of the coniform macula, the whitish maculae being surrounded with black; undulate line whitish with small sagittary spots before it. Hindwing greyish-brown. Illinois.

47. Genus: **Pleromella** *Dyar.*

Proboscis developed, palpi short. Collar not keel-shaped, frons smooth. Anterior tibia with a long claw at the end. Thorax only clad with hair, without tufts; ♂ antennae with rather long pectinations.

P. opter *Dyar.* Forewing light grey warming into whitish, costal margin and hindmargin darker, *opter*. with black veins; anterior transverse line with long teeth, the posterior line running from the apex to the centre of the hindmargin, blackish, the latter line towards the hindmargin distally edged with white, behind it on the submedian fold a white stripe; no maculae. Hindwing diaphanous whitish, veins and margin with a grey hue. The ♀ is darker grey with less prominent markings. Expanse of wings: 34 mm. California.

48. Genus: **Eumichtis** *Hbn.*

Very closely allied to the preceding genera, but the thorax is almost only covered with scales and exhibits loose tufts in front and behind, the abdomen also exhibits a series of tufts and is laterally set with hair; the tibiae are hairy. This genus, from which the species of *brino* only differ in the very feebly serrate ♂ antennae, and which we therefore combine with it as a subdivision, contains more than fifty well-known forms distributed almost over the whole globe, from Greenland to Chile and on the whole northern hemisphere, and even in the Atlantic islands there occur some species. As to further particulars on non-American species, cf. Vol. III, p. 130 to 132.

- subterminalis.* **E. subterminalis** *Hmps.* Forewing red-brown mixed with dark brown and sap-green, in the marginal area whitish with double black transverse lines, filled up with green and proximally bordered with green, the maculae surrounded by whitish, the reniform macula on the median vein inwardly produced; undulate line whitish, in the ♀ broader, band-shaped, opposite the cell with a tooth. Hindwing light brown. Expanse of wings: 38 mm. Colombia.
- sommeri.* **E. sommeri** *Lef.* has been already described in Vol. III, p. 132 and figured on pl. 28 d, and inserted there in the subdivision *Crino Hbn.* which has only finely serrate antennae in the male sex. Forewing dark greyish-brown with a darker central area which is bordered by black, white-edged transverse lines; maculae grey, surrounded by black; behind the double distal transverse line with black and white vein-dots; undulate line white with black sagittae before it. Hindwing whitish, veins and margin brownish-grey, Greenland and Labrador — The larva being above brown and beneath yellow lives on low plants.
- ducta.* **E. ducta** *Grt.* (29 c). The ♂ has only plain antennae, it is much larger, more blackish-brown with a purple tint, a little strewn with white, with double transverse lines though not filled up with white, by a prolongation of the coniform macula distally with small white spots. Hindwing blackish-brown, in the disc whitish. Canada, United States (Maine, New York).
- versuta.* **E. versuta** *Sm.* (= *moilena Streck.*) (29 b). Similar to *ducta*, on an average somewhat smaller, more mixed with grey, with lighter areas before the anterior and behind the posterior transverse lines near the hindmargin; the double transverse lines are filled up with grey, the reniform macula without small white spots. Hindwing lighter, brownish. Canada; Colorado. — The larva is light green, watered with brown and strewn with white, with narrow white longitudinal lines on the dorsum and sides.
- miniota.* **E. miniota** *Sm.* is presumably hardly separable from the two preceding species which probably belong together. According to BENJAMIN, SMITH's types are somewhat browner, but the difference is so insignificant that it may only refer to older specimens that had been exposed to the light.
- loda.* **E. loda** *Streck.* (= *albiserrata Sm.*) (33 h) differs from the closely allied preceding species in the absence of all brown tints and in more contrastingly purer white and black markings. The ♂ hindwing is somewhat purer white than that of the female. British Columbia.
- maida.* **E. maida** *Dyar* (29 b) is a very dark brownish-black species, very scantily, particularly on the veins, strewn with white, at the hindmargin somewhat reddish-brown; the transverse lines are quite extinct, the maculae surrounded by black, in the reniform macula in front and behind fine white lines, below on the median it is inwardly produced; the undulate line consists of black, white-centred small spots, that at the anal angle being more intensely white. Hindwing brownish-grey. From British Columbia.
- hita.* **E. hita** *Dgn.* (29 a). Forewing greyish-white, irrorated with brownish-grey, in the hindmarginal half tinted somewhat reddish-brown; transverse lines double, the distal line with a small white luna near the hindmargin; maculae large, grey, surrounded by black and brown-centred with an oblique median shadow between both; undulate line indistinctly spotted blackish. Hindwing of a pure white with brown veins and margin and a black subterminal spot on the lower median branch. Venezuela, Ecuador.
- photophila.* **E. photophila** *Btlr.* (= *margarita Btlr.*) (29 b). Forewing lilac greyish-brown, in some places tinted olive-green, with rather indistinct double transverse lines and black vein-streaks behind the distal line; the olive-greenish ring-macula is coherent with a round spot below it, the somewhat strangulated reniform macula is darker pupilled. Hindwing white, veins and margins brownish. Chile.
- chlorosticta.* **E. chlorosticta** *Dyar.* Forewing purple grey with numerous green and black spots with black, finely dentate transverse lines and large green though faded maculae which are not surrounded by black; undulate line spotted, with a larger spot at the anal angle, proximally with a green line. Hindwing at the base whitish with dark veins and central spot, an undulate postmedian line and a blackish margin. Mexico (Hidalgo).
- chlorograptata.* **E. chlorograptata** *Dgn.* Forewing brown, in the basal and subterminal areas irrorated with violet, the transverse lines edged with green, in the disc dark blackish-brown, in it the obliquely oval ring-macula surrounded by green, and the large reniform macula being somewhat less distinctly marked green and proximally bordered with black; the area between the doubly undulate subterminal line and the blackish-brown small marginal lunae is mixed with green, traversed by the violet ends of the veins. Hindwing brownish with a bronze lustre. Expanse of wings: 25 to 26 mm. Peru.
- jucunda.* **E. jucunda** *Jones* (29 b) is allied to the preceding; forewing greenish-white, in the central area hued with brown, with large white basal and costal spots, fine blackish transverse lines and large greenish-white maculae, the ring-macula connected with a similar spot below it, both being finely bordered with black; in the central area, particularly towards the hindmargin, fine black transverse striae; at the distal margin 2 large black triangular spots, a similar subcostal spot before the apex. Hindwing brown, at the margin darker. Brazil. The species was described as a *Hypnotype*, but on account of its tufted abdomen it cannot belong to that genus.
- jucundissima.* **E. jucundissima** *Zerny* (29 b). described as a *Dryobota*, we also place hereto owing to its external resemblance, because that genus has no other representatives in America. Forewing bone-white, in the basal

area and postmedianly suffused with reddish-brown, with similarly running transverse lines; the ring-macula is punctiformly centred and the reniform macula doubly centred, between both an oblique blackish-brown median shadow; before the distal margin and subapically at the costal margin with the same blackish-brown triangular spots as in *jucunda*. Hindwing diaphanous white, only at the apex brownish. Southern Brazil (São Paulo).

E. exstrigata *Dgn.* Forewing lilac-grey, in the basal area, in the centre of the costal margin, and *exstrigata*, postmedianly brownish; between the large not surrounded pale maculae the cell is likewise brownish; before the centre a row of 5 black strigiform lines enclosing a faded submedian spot which is parted by a light line; before the margin small black sagittary spots, at the anal angle a semicircular line. Hindwing diaphanous white with blackened veins and marginal band, as well as a central dot and a punctiform postmedian line. Expanse of wings: 39 mm. Colombia (Quindiu Pass).

E. adducta *Fldr.* Forewing grey with a reddish tint, in the discal area irrorated with brown and strewn *adducta*, with a darker colour; transverse lines double, crenulate, filled up with grey, maculae centred brown; before the indistinct grey undulate line with small blackish spots. Hindwing yellowish-white, in the marginal half greyish-brown, in the ♀ quite reddish-brown. Expanse of wings: 40 to 42 mm. Venezuela.

49. Genus: **Xylinissa** *Hmps.*

Separated from the preceding genus by narrower wings, the abdomen being only tufted on the first rings without lateral hair, and by shorter haired tibiae; otherwise everything is the same. The ♂ antennae are only ciliated or plain. Only 4 species have been described.

X. lignitis *Schs.* (29 b). Forewing purple grey with reddish-brown irroration particularly in and behind *lignitis*, the cell, with a black basal ray, hardly traceable transverse lines, and grey maculae surrounded with black, the ring-macula connected with a similar round spot below it; the veins before the undulate line, which is indistinctly marked by small brown sagittae, are marked black. Hindwing white with brown veins and marginal line. Colombia (Bogotá).

X. oniroë *Dgn.* (29 b) has greyish-brown forewings with whitish irroration in the costal-marginal half *oniroë*, of the basal area and in the central area as far as down to the submedian fold, a black basal ray and indistinctly double transverse lines, the posterior line being more punctiform or strigiform; maculae whitish grey, the reniform macula on the median proximally produced; undulate line whitish, distally edged with blackish-brown, with small black spots before it. Hindwing purely white, diaphanous, with brown veins. Ecuador.

X. cossoides *Btlr.* (29 c). Forewing greyish-brown, striated darker with a black basal ray being *cossoides*, coherent with the coniform macula which bends round upward and unites with the ring-macula, being open above and below; posterior transverse line single, dentate; reniform macula large, surrounded with black; veins of the marginal area striped black; the undulate line consists of white streaks distally bordered with black. Hindwing diaphanous white, veins in the marginal area striped black. Chile.

X. pulverea *Hmps.* is on the forewing grey, strewn with blackish-brown, with a black basal ray, *pulverea*, an anterior double and a posterior single transverse line with vein-dots; the large maculae are incompletely surrounded by black and encircled with some yellow scales; instead of the undulate line some small black spots and a black anal ray. Hindwing white with a small black central spot and dark apical veins. The ♀ is more marked black and white and lacks the yellow colour in the maculae. Expanse of wings: 36 to 38 mm. Peru.

X. strigosa *Hmps.* Forewing purple grey, in some places irrorated with brown and densely striated *strigosa*, with blackish-brown, with indistinct double blackish-brown transverse lines, the anterior line proximally at the costal margin bordered with whitish; the grey maculae are finely surrounded with black and centred dark brown, instead of the undulate line there is an interrupted reddish-brown nebulous stripe. Hindwing light reddish-brown, on the veins and margin darkened, with a darker central spot. Expanse of wings: 34 mm. Peru (Acopampa).

50. Genus: **Rhizotype** *Hmps.*

Separated from the following genus *Bryomima* by a large bipartite tuft on the prothorax and a loose tuft on the metathorax, as well as a series of tufts on the first abdominal rings. Besides palearctic species only one tropical American species. A series of smaller Noctuids that were described as *Rhizotype*, have in the meantime been transferred to the genus *Homoanarta*. Cf. also Vol. III, p. 138.

Rh. confluens *Drc.* (33 h). Forewing dark reddish-brown with a lighter costal-marginal stripe, the *confluens*, distal margin and hindmargin being lighter, too; the large maculae flown together in the shape of a U are light brown; from the apex to the centre of the hindmargin runs a pinkish-brown line; at the anal angle there is a dark brown spot; fringes speckled light and dark. Hindwing dark brown. Expanse of wings: 37 mm. South East Peru.

51. Genus: **Bryomima** Stgr.

Proboscis developed, palpi erect with a short terminal joint; frons smooth. Thorax clad with hair intermixed with some scales, tuftless, abdomen only with a basal tuft; tibiae outside with long hair. As to the numerous palearctic species cf. Vol. III, p. 139, pl. 34 d, e, and Vol. XI, p. 112, pl. 14 e, f.

falsa. **B. falsa** Grt. (= *pohono* Sm.) (29 d). Forewing olive-ochreous, in some places irrorated with blackish-brown; anterior transverse line proximally bordered with yellowish, posterior line indistinct with white vein-dots behind it, the ochreous maculae surrounded with blackish-brown; the undulate line is proximally bordered by a broad blackish-brown band. Hindwing white with blackish-brown veins and margin. California. — The form *uintara* Sm. (29 c) is hued with reddish or pinkish carmine, but the colour is apparently rather inconstant and grows pale *).

muscosa. **B. muscosa** Hmps. (29 d) is very similar, at once discernible by quite dark greyish-brown hindwings. Forewing more olive greyish-brown, transverse lines on the averted sides bordered with whitish not yellow; the ring-macula is entirely absent, the reniform macula is small, in a whitish ring. Undulate line whitish. Washington.

distans. **B. distans** B. & McD. (29 d) approximates *muscosa*, but it is lighter, the dark parts more contrasting, the forewing more ochreous, in some places irrorated with blackish brown, with such spots at the base of the costal margin, in the central area, subapically at the costal margin, and in the centre of the subterminal area; transverse lines dentate; the ring-macula is small, round, ochreous, the reniform macula not sharply defined. Hindwing in the ♂ diaphanous white, distally smoky-brown, in the ♀ smoky-brown. Arizona.

pulverulenta. **B. pulverulenta** Sm. (29 c) is a smaller, brownish-grey species strewn with black, with a pinkish-reddish tint on the folds, with black transverse lines, the posterior line being dentate; ring-macula in a whitish ring, reniform macula grey, not marked; undulate line proximally irrorated with blackish. Hindwing yellowish-brown, at the margin darker. Colorado, Arizona.

chryselectra. **B. chryselectra** Grt. (= *benigna* Edw.) (29 c). Forewing whitish, strewn with dark, before and behind the centre tinted pinkish-reddish, with double dentate transverse lines and small maculae surrounded with black; before the undulate line with small dark sagittae. Hindwing light brown, at the margin darker. Colorado and Arizona. — The form *orizabae* Strd. (= subsp. 1 Hmps.) (29 c) has the pinkish-reddish antemedian and postmedian areas coloured dark olive-brownish with a very dentate median shadow. Mexico.

olivaria. **B. olivaria** Hmps. The reddish-brown forewing is strewn with blackish-brown and greenish-white, in the marginal area of a purer white with brown dentate transverse lines being on both sides bordered with greenish-white, and with greenish-white maculae surrounded by black; the white dentate undulate line is proximally shaded with black. Hindwing white, on the veins and margin dark brown. Expanse of wings: 34 mm. Mexico (Hidalgo).

52. Genus: **Hypnotype** Hmps.

The thorax is only clad with scales, the centre of the collar is somewhat raised in the shape of a keel, prothorax and metathorax with loose tufts, abdomen quite tuftless; tibiae thickly scaled. Only 1 species:

placens. **H. placens** Wkr. (29 c). Forewing whitish with an olive-brownish tint, at the the costal margin spotted black with greenish-black transverse lines, the posterior of which is crenulate; the coniform macula is a cordiform white spot; between the whitish maculae a black spot. Hindwing white, veins and margin brown. Colombia.

53. Genus: **Andicola** Stgr.

Small robust Noctuids with a small head and very small, long-ciliated eyes; body long-haired, almost woolly, abdomen tuftless, legs and tibiae also long-haired; ♂ antennae serrate-dentate, short-ciliated. Only one species from the Andine Alps, which is undoubtedly allied to the following genus *Sympistis*.

huallatani. **A. huallatani** (29 d). Forewing dingy brownish-grey, in the ♀ darker, with the 3 yellowish olive-green maculae, fine black transverse lines and with an S-shaped, narrow green subterminal band forming 2 teeth below the centre with whitish veins therein. Hindwing light grey, at the margin broadly blackish. From the Andine Alps of Bolivia, from an altitude of 5000 m.

54. Genus: **Sympistis** Hbn.

Distinguished from the preceding genus by an admixture of coarse scales in the thorax and decidedly reniform eyes. All the species but one also occur in the palearctic region.

melaleuca. **S. melaleuca** Thnbg. (= *bicycla* Pack.). Described and figured in Vol. III, p. 254, pl. 50c. The small blackish-grey Noctuid with white hindwings margined with black also occurs in Canada.

*) Compare what has been said at *pohono* in the note on p. 183.

S. kelloggi *Edw.* (29 d). Forewing white, irrorated and thickly strewn with blackish-brown, with black *kelloggi*. transverse lines, small maculae, the reniform macula being a faded white spot; the white undulate line is proximally irrorated with black, with small black sagittae in front of it. Fringes speckled. Hindwing blackish-brown with a white median band and a black median spot and veins therein. California.

S. lapponica *Thnbg.* (= *tenebricosa* *Mschlr.*) (Vol. III, p. 255, pl. 50 c). This small species with extensively white-irrorated forewings with intense black transverse lines, minute white maculae, and blackish-brown hindwings with a whitish costal-marginal spot also flies in Greenland and Canada. — The grey or red-brown larva with black dorsal spots lives on *Vaccinium* and birch-trees.

S. zetterstedti *Stgr.* (Vol. III, p. 255, pl. 50 e) differs in much less white-irrorated forewings, and likewise flies in Greenland and Canada. — The form **labradoris** *Stgr.* has on the forewing a much larger white postmedian spot extending to the lower median branch.

S. funesta *Payk.* (= *funebis* *Hbn.*) (Vol. III, p. 255, pl. 50 e) is irrorated with grey on the blackish-brown forewing except the central area, with thick black transverse lines and small, grey ringed maculae. Hindwing quite blackish-brown with white fringes. From Labrador. — f. **cockleyi** *Dyar* was described as *Homo- cockleyi*. *hadena*; its maculae are almost entirely absent. and the postmedian area is much lighter. British Columbia.

55. Genus: **Harpaglaea** *Hmps.*

Thorax purely clad with hair, the collar in the centre with a slight keel. the prothorax with a triangular tuft; anterior tarsi with 5 bent, claw-shaped spines on the outside of the first joint. Abdomen flattened without tufts, but with lateral hair. The genus is exclusively American.

H. sericea *Morr.* (= *venustula* *Grt.*) (29 d) is purple grey, irrorated with red-brown and strewn with black, with whitish veins; at the hindmargin whitish; transverse lines whitish, on the inverted sides bordered with blackish-brown, the maculae also in whitish rings, the reniform macula below centred blackish; the whitish undulate line is proximally bordered with red-brown, distally with blackish. Hindwing lustrous brownish-black with reddish fringes. United States.

H. tremula *Harv.* (29 e) is similarly marked, but the veins are not striped whitish, at most somewhat in the marginal area, also the transverse lines are plainly brown, and the maculae surrounded with brown. Texas.

H. pastillicans *Morr.* (29 d) is only red-brown at the costal margin and hindmargin, otherwise purple-grey, strewn with black, marked like *tremula*, with plain brown transverse lines. United States to Pennsylvania.

56. Genus: **Epiglaea** *Grt.*

Separated from the preceding genus by the absence of the tarsal spines. all the rest the same. Only 2 species:

E. decliva *Grt.* (= *delecta* *Grt.*) (29 e). Forewing red-brown, somewhat irrorated with grey, with dark transverse lines bordered with a somewhat lighter colour, with large maculae surrounded by whitish, between them a faded median shadow, the reniform macula below dark-pupilled; behind the distal transverse line dark vein-dots; the whitish undulate line is proximally bordered with red-brown. Hindwing on the pinkish-reddish ground densely irrorated with blackish-brown, fringes pink. Canada; Eastern and Central States; Central America.

E. apiata *Grt.* (29 e) is smaller than *decliva*, of a brighter red-brown colour, otherwise similarly marked, but the posterior transverse line is not dentate and without vein-dots behind it. Maculae surrounded with a darker red-brown colour. Central States.

57. Genus: **Psectraglaea** *Hmps.*

In the structure entirely like *Harpaglaea* with the same spines on the outside of the first joint of the anterior tarsus, but without the triangular tuft on the thorax. But one species, since *olivata* *Harv.*, which is reckoned hereto by others, belongs to the Agrotids owing to its spined tibiae.

P. carnosa *Grt.* (29 h). Forewing olive-brown, irrorated with crimson, with hardly traceable transverse lines, the maculae feebly surrounded with yellowish, the undulate line being also yellowish; the head is contrastingly reddish-yellow, with a crimson tint. United States (Maine, Massachusetts, New York).

P. pilifera *Wkr.*, from the remote Island of Tristan d'Acunha, is smaller, with dark red-brown forewings being tinged with blackish in the costal area, but otherwise very feebly marked. Hindwing ochreous with a dark brown marginal area.

58. Genus: **Conistra** Hbn.

This genus being also known as *Orrhodia* Hbn. is also represented in America by a number of species. They entirely resemble the species of *Epiglaea*, but the prothorax exhibits at most quite feeble indications of a somewhat keel-shaped tuft, or it is entirely absent. The abdomen is very flat, smoothly scaled, without tufts. Cf. also Vol. III, p. 145.

- inulta*. **C. inulta** Grt. (29 e) is a large red-brown species with purple blackish-brown transverse lines, very large, often confluent maculae encircled with red-brown, a reddish-brown undulate line and before it dark veins. Hindwing red-brown with reddish fringes. Canada, United States. — The dingy brown larva with a whitish lateral stripe lives on guelder-rose.
- viatica*. **C. viatica** Grt. (29 e) is still larger, very similarly coloured and marked, but the transverse lines, particularly the posterior line, are crenulate, the posterior line being distally irrorated with dark; the ground-colour is somewhat more irrorated with whitish, the maculae are finely surrounded with whitish. Hindwing dark brown, fringes with a slight pinkish tint. United States to the Southern States, Texas. — The larva is of a dingy greenish colour with faded chessboard-like darker markings. It lives on oak etc.
- adulta*. **C. adulta** Gn. is a doubtful North American species which was described according to a manuscript plate of ABBOT and looks like *viatica*; the larva is also figured there on a low plant, not on oak. For the present we cannot give any further particulars about this species.
- signata*. **C. signata** French (29 f) resembles *viatica*, but it is much smaller with broader wings, more purple grey irrorated with reddish-brown, the black transverse lines on the averted sides bordered with grey, the ring-macula much smaller. Hindwing blackish-brown with reddish fringes. Central States.
- tristigmata*. **C. tristigmata** Grt. (29 f) is smaller than the preceding, irrorated more yellowish-grey, the anterior transverse line indistinctly double and almost straight; the black filling of the lower end of the reniform macula distally shows a white dot; the coniform macula is very small; the light undulate line is on both sides bordered with brown. Canada; North-Eastern States. — The larva is dull blackish with indistinct lighter dorsal and subdorsal lines, a broad lateral stripe being tinted orange-yellowish.
- sidus*. **C. sidus** Gn. (29 f). Forewing bright brick-coloured reddish, strewn with blackish-brown with darker striped veins, dark, finely crenulate transverse lines, without a ring-macula with a yellow reniform macula, above and below generally with white dots; the indistinct light crenulate undulate line is proximally irrorated with brown. Hindwing brown with ochre-reddish fringes. Canada to Texas. — The larva is dark red-brown with indistinct light dorsal and subdorsal lines and a faded light yellow lateral stripe. — In the form **vinulenta** Grt. *vinulenta*, the reniform macula is white instead of yellow. — **walkeri** Grt. is a dull ochreous grey form with a faded and *walkeri*, indistinct marking and may only represent hibernated specimens. — **colorado** Sm. (29 f) is a reddish loam-coloured *colorado*, or ferruginous-yellow form with quite extinct markings from Colorado.
- morrisoni*. **C. morrisoni** Grt. (29 g). Forewing light greyish-brown, irrorated with reddish-yellow, with hardly darker transverse lines being whitish on the averted sides, and a narrow white small luna instead of the reniform macula, which exhibits a blackish spot below; the light crenulate undulate line is proximally shaded with brown. Hindwing greyish-brown with reddish fringes. Canada; Massachusetts New York. — The blackish larva has *castanea*, distinct whitish dorsal and subdorsal lines and a white lateral stripe. — Whether **castanea** Strd. (= ab. 1 *Hmps.*) *castanea*, with chestnut-red forewings and deeper red fringes of the hindwings belongs to it, is questionable.
- devia*. **C. devia** Grt. (29 e) has darker purple brown forewings strewn with whitish-grey, with a browner central and marginal area with whitish transverse lines and absent median line; instead of the reniform macula a small luna in a whitish ring; before the whitish undulate line there is another oblique whitish line. Hindwing greyish-brown with yellowish fringes. Canada; North-Eastern States. — The larva is brown with whitish lines and lateral stripes, which are distinctly bordered with dark brown.
- fringata*. **C. fringata** B. & McD. (29 g) is most similar to *devia* in the marking, but it is much larger with redder fringes. Forewing of a bright reddish-brown, in the basal area strewn with grey, with lighter narrow, almost straight transverse lines and a long narrow reniform macula distally bordered with light yellow; before the yellowish undulate line an olive-grey shadow proximally bordered by a broad whitish line. Hindwing smoky-grey with contrastingly brownish-red fringes. California.
- indirecta*. **C. indirecta** Wkr. (= *moffatiana* Grt.) (29 f). Forewing ochreous, densely irrorated with red, with reddish-brown striped veins, red-brown transverse lines, the maculae surrounded with red-brown. Hindwing paler reddish-yellow, with yellowish-white fringes. Canada and North-Eastern States.
- graejiana*. **C. graejiana** Grt. (29 g) is closely allied to *indirecta* and has been frequently mistaken. It is invariably of a purer yellow, the red transverse lines are straighter and thicker, the hindwings are paler yellow. Of the same range as the preceding, as far as Massachusetts. — The white larva with faded light yellow transverse rings lives on Hamamelis.

C. pettiti Grt. (29 f) is also somewhat similar, invariably smaller, of a pale yellow ground-colour, densely irrorated with fiery red, with blackish-brown veins; the reniform macula is below filled up with blackish, the median line is broader, more faded, behind the distal transverse line there are short dark vein-streaks. Canada; New York; Iowa.

C. ceromatica Grt. (29 f) has deep crimson forewings irrorated with a silvery grey, with darker red transverse lines and small dark vein-streaks behind the distal line; the maculae are somewhat surrounded with whitish, the reniform macula is below pupilled dark; behind the whitish undulate line there are likewise dark vein-streaks. Hindwing ochreous-red. Canada; United States as far as New York, New Jersey.

59. Genus: **Amathes** Hbn.

This genus having been formerly denoted as *Orthosia* O., and recently as *Parastichtis* Hbn., chiefly only differs from *Conistra* in the more cylindrical, scarcely flattened abdomen. Cf. also Vol. III, p. 150 and Vol. XI, p. 114.

A. purpurea Grt. (29 g). Forewing purple grey, irrorated with red-brown, with double, feebly crenulate transverse stripes, the maculae surrounded by brown, the reniform macula below pupilled blackish, with a faded median line and a grey, proximally dark-shaded undulate line. Hindwing greyish-brown. — The form **fornica** Sm. is based upon a very small specimen, of a more pinkish-brownish ground-colour, the latter being at any rate most variable in *purpurea*. — **crispa** Harv. has a pale chestnut-red, postmedianly darker ground-colour, the hindwing is also chestnut-brown, in the marginal area lighter with a faded subterminal band and dark central lunula. — **antapica** Sm. (29 h) is ferruginous reddish-grey. All the forms occur from Canada to California.

A. bicolorago Gn. (= *spureata* Wkr.) (29 g) is, like *purpurea*, a very variable species; the type is reddish-yellow, in the marginal half irrorated with blackish-brown, with rather indistinct crenulate transverse lines and vein-dots behind the distal maculae which are surrounded with brownish, the reniform macula being below filled up with blackish; the median line separates the lighter basal half from the dark marginal part; behind the ochreous undulate line the marginal area turns lighter again. Canada and Eastern United States, to the west as far as the Mississippi. — The form **ferrugineoides** Gn. is not irrorated darker in the marginal half and shows distinct, more red-brown markings. — **verberata** Sm. (29 h) is a more yellowish-grey form with darker veins, in the postmedian area but very scantily irrorated with a darker brown. Canada to Colorado.

A. acta Sm. is likewise similar, with longer and more pointed forewings, the colour varying from light reddish-grey with a yellowish tint to ferruginous reddish-brown, with markings of the same colour though somewhat deeper, therefore not contrasting; transverse lines double, filled up with a somewhat lighter colour, with a very prominent median shadow; the light undulate line is proximally shaded with ferruginous; the maculae are surrounded with red-brown, the reniform macula is below pupilled leaden-grey. Hindwing light yellowish. Expanse of wings: 32 to 34 mm. Canada; Washington; Oregon.

A. straminea Sm. looks like the uni-coloured forms of *bicolorago*, but it is smaller and with much more faded markings; forewing dull straw-coloured with brownish single transverse lines, in the postmedian area somewhat darkened. Hindwing darker smoke-coloured grey. Expanse of wings: 28 mm. Colorado.

A. decipiens Grt. (29 g) is a larger, bright yellow species, irrorated with red-brown, with very faint darker markings, the reniform macula as usually below pupilled blackish, in the centre very much strangulated; the yellow undulate line is proximally shaded with reddish-brown. Hindwing of a subdued light yellow colour. United States (Indiana).

A. ralla Grt. & R. (29 h) is smaller than the preceding, more brownish, with thicker though faded double red-brown transverse lines and 2 dark dots in the cell before the antemedian line; the ring-macula is obliquely elliptical, above open, the reniform macula centred with brownish; instead of the undulate line a row of dark dots, behind which the marginal area is irrorated with reddish-brown, except the apex. Hindwing yellowish-white. Eastern and Central States.

A. puta Grt. & R. (= *eurora* Grt. & R.) (29 h) is irrorated with a fiery reddish brown on its grey ground, marked like the preceding with double transverse lines, an intense median shadow and brown-encircled maculae, a quadrangular ring-macula, above and below open; marginal area darkened, parted by the lighter undulate line. Hindwing light brownish-grey. Canada; Eastern States. — **dusca** Sm. (29 h) is still smaller and darker, with a more faded marking and shorter broader forewings. From Canada.

A. inops Grt. (= *insipida* Streck.) (29 h). Forewing yellow, irrorated with reddish-brown and strewn with dark brown with faded brown transverse lines and vein-streaks behind the distal line; ring-macula small, round, the reniform macula below pupilled with a very intense blackish-brown; undulate line indistinctly lighter, proximally bordered with dark brown. Hindwing whitish, feebly brownish. United States (Maine).

A. aggressa Sm. (29 i) differs from its allies by its very light yellowish-grey ground-colour, which is irrorated with bluish-grey in the basal and marginal areas, with blackish double transverse lines and a distinct

smoky-grey median shadow; the undulate line consists of small greyish-brown internerval spots; the large maculae are only feebly marked, the reniform macula as usual below pupilled. Hindwing light yellowish. Expanse of wings: 28 to 31 mm. Canada; Colorado.

immaculata. **A. immaculata** *Morr.* has monotonously red-brown forewings with almost extinct transverse lines and small indistinct black maculae, a faded black marginal band and red fringes. Hindwing dark brownish grey with red-brown veins. Expanse of wings: 37 mm. Colorado *).

miastigma. **A. miastigma** *Dyar.* Forewing straw-coloured, hued with pink, with slightly darker transverse lines and median shadow, and the maculae surrounded with dark, the reniform macula below pupilled with a round black spot; the subterminal line irregularly undulate, light, with small blackish internerval spots, the most distinct of which is at the upper radial branch. Hindwing whitish, veins and margin grey. Mexico (Zacualpan).

60. Genus: **Atethmia** *Hbn.*

Slightly distinguished from the preceding genera; head and thorax are clad with hair and hair-like scales, the centre of the collar is raised somewhat ridge-shaped, and on the prothorax there is a keel-shaped tuft; the abdomen does not exhibit any tufts, and there are only hair at the base and on the sides. Beside some palearctic species (cf. Vol. III, p. 153) there also occurs a species in America:

pampina. **A. pampina** *Gn.* A variable species with a produced, pointed apex of the forewing and a dentate margin which besides also varies in the intensity of the crenulation, and there even occur specimens in which the distal margin is almost not dentate at all. In the type the forewing is orange, irrorated with purple red, the transverse lines bordered with a lighter yellowish colour, and large maculae, the dentate yellowish undulate line is proximally shaded with purple red. Hindwing fiery red. — Other colours are exhibited by: **pampinella** *Strd.* (= ab. *pampinella* *la.* 1 *Hmps.*) being entirely suffused with purple pink with hardly any trace of yellow, with indistinct markings; **brunneo-ochracea** *Strd.* (= ab. 2. *Hmps.*) with a light ochre-brownish ground-colour without orange or red irroration, which is only to be noticed on the hindwing and at the end of the abdomen. All these forms are wide-spread in Canada, to the south as far as Virginia and to the east as far as New York. — Northern and western specimens are generally lighter, more yellow, so that the western race from Colorado was denominated: **glenwoodi** *B. & Benj.* in which the ground-colour is light yellow, hardly reddish, with feebler and more contrasting markings, the markings inside filled up with a slightly darker colour; also the thorax and abdomen are light yellowish.

61. Genus: **Jodia** *Hbn.*

Separated by the preceding genus by a loose, not keel-shaped tuft on the prothorax. Only 1 species:

rufago. **P. rufago** *Hbn.* (= *honesta* *Wkr.*) (29 i) in the shape and marking somewhat resembles the preceding. Forewing ochreous irrorated with red and a little strewn with blackish, the posterior transverse line marked by a double row of black vein dots. Canada to Texas and Florida. — The light brown larva with red-brown reticulations shows a broad yellowish-white lateral band.

62. Genus: **Brachycosmia** *Hmps.*

Proboscis stunted, eyes small, reniform or bean-shaped; head and thorax only clad with hair, the prothorax exhibits a triangular tuft; all the rest as in the preceding. Only 1 species:

digitalis. **B. digitalis** *Grt.* (29 i). Forewing bright red-brown, except the median area irrorated with grey, with straight whitish transverse lines and very small maculae. Hindwing red-brown. In the ♀ the transverse lines are stronger and of a pure white. Maine, New Hampshire, New York, Illinois.

63. Genus: **Cosmia** *O.*

This genus being also known as *Xanthia* *Hbn.* contains, beside one species being also wide-spread in the palearctic region, two more species which are purely American. They differ from *Atethmia* and *Jodia* in the thorax being purely clad with hair and the collar not being keel-shaped, but the prothorax likewise exhibits a slightly keel-shaped tuft. (Cf. Vol. III, p. 153, and Vol. XI, p. 115).

*) *A. americana* *Morr.* is the palearctic *A. lota* *Linn.* and is to be cancelled as being non-American.

C. lutea *Ström.* (= *flavago* *F.*). This common palearctic species also occurs in Canada and the United States down as far as New York. The dark yellow species with purple brown spots is unmistakable. (Vol. III, p. 154, pl. 24 i).

C. pulchella *Sm.* (29 k). The fiery-red forewing is irrorated with purple brown and grey except the basal and marginal areas, with blackish-brown transverse lines and small grey-centred maculae, the reniform macula is above encircled with fiery-red, below in the shape of a U with white; undulate line jet-black. Hindwing reddish-brown with fiery-red fringes. Canada.

C. andesica *Hmps.* (29 i) has light reddish-grey forewings with faded transverse lines dotted black on the veins; only the reniform macula is marked by a small lighter luna; the undulate line is a faint dark shadow. Hindwing light brownish, at the margin darker. Argentina (Pucnte del Inca).

64. Genus: **Homoglaea** *Morr.*

Distinguished by the entirely tuftless thorax and abdomen which are purely clad with hair. The forewing is short with a roundish apex. Otherwise like in the preceding. The genus is purely American.

H. carbonaria *Morr.* (29 k). Forewing yellowish-brown, in the costal-marginal area grey, in the inner part more irrorated with red-brown, with quite indistinct double transverse lines and darker centred maculae encircled with grey; the grey undulate line is proximally shaded with brown and exhibits here two small black sagittae below the costal margin. Hindwing reddish brownish-grey. Canada to California. — The larva is light brown, dotted darker with very faint whitish longitudinal lines, and lives on willows.

H. dives *Sm.* (29 k) is similar to the preceding, of a deeper red-brown colour, in the costal part almost purple black, but at the hind-margin lighter, with double velvety-brown transverse lines and an intense median shadow; the ring-macula is large, encircled with black, the reniform macula is distally scaled yellow with a yellow central line. Hindwing blackish. Expanse of wings: 41 mm. British Columbia; Oregon.

H. hircina *Morr.* (29 i). Forewing lead-coloured blackish-brown, with indistinctly double transverse lines filled up with a lighter grey, the maculae surrounded with light grey; the grey undulate line is proximally bordered by black dots, often only below the costal margin. Hindwing greyish-brown, at the margin somewhat darker. Canada.

H. californica *Sm.* (= *insinuata* *Sm.*) (29 k) is a somewhat smaller, dull brown species feebly strewn with whitish and in the disc scantily clad with ochreous hairs, with indistinct transverse lines, being bordered with grey on the averted sides, the maculae surrounded with grey; the very indistinct, somewhat lighter undulate line is proximally shaded with brown. Hindwing dull brown. Washington; California.

H. murrayi *Gibs.* (27 k) is a representative from the arctic parts of North America (North-Western Territory). Forewing sand-coloured, in the central and marginal areas irrorated with a slightly darker brown, with darker brown transverse stripes being bordered with a somewhat lighter grey on the averted sides, the maculae very indistinctly surrounded with grey; the undulate line is indistinctly grey. Hindwing light brown with a somewhat darker margin.

H. variegata *B. & McD.* (29 k) has ochreous forewings intensely strewn with black, so that the ground-colour is purely visible only at the costal margin, between the double transverse lines, a little in the cell and subterminally; maculae surrounded with orange, the reniform macula is shaped like an 8 filled up with black; the undulate line consists of black dots. Hindwing dark smoky-grey with somewhat reddish-tinted fringes. Arizona.

Subfamily: **Amphipyrinae.**

In conformity with the corresponding volumes of the other faunal regions of this work, we keep up this name, having previously (p. 20) dealt with the real, biologically separated *Apatela* or *Acronycta*; otherwise the collective name of *Acronyctinae* in HAMPSON's sense would have to be placed, or as is now customary in America: *Apatelinae*. It is one of the most comprehensive groups with a great number of tropical representatives with a partly very different exterior, though well characterized by bare, not ciliary eyes and spineless tibiae. The other marks exhibit such great varieties that it is impossible to state here any common facts. The proboscis and palpi may occur in all sizes, the frons may be smooth or provided with convexities, and often with horny projections underneath. The eyes are almost invariably large, but there is also here an „anartoid“ group with small bean-shaped eyes. All sizes, from large ones to the smallest, are represented, the wings are frequently decorated with golden or silvery spots. The larvae are bare, with but one short hair on each tubercle. Some bore into reeds or stalks and roots of herblike plants, such as the *Nonagria* or the „borers“, the species of

Papaipema, as well as the *Hydroecia*. Beside the *Apatela*, we have furthermore already dealt with another small part of the genera beginning from *Xerociris* (cf. p. 8) to *Psychomorpha*, which on the one hand are closely allied to the *Amphipyrinae*, but which on the other hand exhibit close relations — also biologically by the larvae living on *Vitis* — to the *Agaristidae*.

1. Genus: **Amphipyra** O.

Proboscis developed, the erect palpi are moderately long, the frons is smooth; the thorax is covered with hair and hair-like scales, without tufts, the abdomen is flattened, laterally hairy. This chiefly palearctic and Indo-Australian genus is also represented in America by 3 representatives. (Cf. Vol. III, p. 158; Vol. XI, p. 118).

pyramidoi- **A. pyramidoides** Gn. (30 a) is distinguished from the extremely similar palearctic *pyramidea* (Vol. III, pl. 38 a) by its somewhat smaller size, more distinct macular marking, and the oblique course of the postmedian line in its subcostal part. — *inornata* Grt. has more darkened hindwings, on which the disc remains copper-reddish. — **conspersa** Riley is intensely strewn with grey, with almost extinct markings. Very widely distributed from Canada to Mexico, and mostly common. — The green larva with a white dorsal stripe and an interrupted lateral stripe, exhibits a pointed protuberance on the 12th ring and lives on foliage-trees.

tragopogini- **A. tragopoginis** L. (= *repressus* Grt.) is a very common species, being also distributed in the palearctic regions (cf. Vol. III, p. 159, pl. 38 d). Forewing greyish-brown with a greasy lustre, with 2 or 3 small black discal spots. From Canada down to New York. — The green, posteriorly somewhat raised larva lives on low plants.

glabella. **A. glabella** Morr. (30 a) is much lighter greyish-brown, in the terminal area more whitish with indistinct double transverse lines, a blackish ring-macula and a whitish reniform macula, the latter below with 2 black dots. Hindwing light brownish, towards the margin darker with a whitish marginal band before the black marginal line. — *brunneoatra* Strd. (= ab. 1 *Hmps.*) has the forewing more intensely hued with brownish-black. Pennsylvania to California and Arizona.

problematica. **A. problematica** sp. n. (30 a) corresponds with the diagnose of this genus except the abdomen not being flattened. A large species with a light reddish-grey forewing with a slight greasy lustre, finely irrorated with a darker colour, with brownish-grey crenulate transverse lines, the subbasal line extending to the submedian fold; instead of the coniform macula a very slight projection; the upper maculae are medium-sized, encircled with a plain brownish grey, the ring-macula horizontally-elliptical, at both its ends somewhat pointed, the reniform macula being concave towards the margin is below distally not defined; the undulate line is scarcely noticeable as a very indistinct darker shading; before the light basal line of the fringes there are black marginal dots. Hindwing whitish, margin and veins brownish. According to 1 ♀ from Peru (Coll. SEITZ) in the Senckenberg Museum at Frankfurt o. M.

2. Genus: **Magusa** Wkr.

This genus is represented in America by but one species with narrow and long wings. The structure is similar to the preceding genus, but the thorax is chiefly covered with scales and exhibits a feeble, twice keeled tuft; the ♂ anterior femora bear hair-tufts, the abdomen has a tuft on the first rings. — The only American species of the genus *Magusa* is hardly generically to be separated from the Indian genus *Sasunaga* Mr. (cf. Vol. XI, p. 119), one species of which, *tenebrosa* Mr. (Vol. XI, pl. 15 c) is wide-spread and very common in quite a number of entirely heterogeneously coloured forms. — In Africa there is the genus *Callixena* Saalm., which, consisting of the only species *versicolora* Saalm., has recently also been ranged in the genus *Magusa*.

orbifera. **M. orbifera** Wkr. (= *divaricata* Grt., *diseidens* Fldr., *sarpida* Fldr., *angustipennis* Mschlr., *divida* Mschlr.) (30 a) is a most extraordinarily variable insect, the type of which is red-brown, darker irrorated, with black marginal streaks, indistinct double transverse lines filled up with grey, the distal line of which is proximally and distally shaded with grey; the maculae are finely encircled with black; before the light undulate line at the costal margin a black spot, behind it mostly lighter. Hindwing blackish-brown with a dark coppery reflection, basally scantily scaled, with light fringes. In the ♀ the hindmarginal area is light grey, the costal-marginal half red-brown. — In the form **orbiferella** Strd. (= ab. 1 *Hmps.*) (30 a) the forewing is dark brown, submedianly irrorated with whitish at the transverse lines and at the costal-marginal part of the undulate line. — **orbiferana** Strd. (= ab. 2 *Hmps.*) (30 b) has a light reddish-brown hindmarginal half, the costal-marginal half being irrorated with black. — **perversa** Strd. (= ab. 3. *Hmps.*) (30 b). Like in the typical ♀, the hindmarginal half below the submedian fold is grey, distally expanding, but the costal part is not red-brown. — **strigifera** Wkr. likewise resembles the normal ♀, but all the markings are bordered with grey. New York to Argentina and the West Indies. — The light green, white-striped larva lives on *Condalia ferrea*.

3. Genus: **Dipterygia** *Stph.*

Distinguished from *Megusa* particularly by the shorter and broader wings; forewing at the inner angle somewhat produced, above it the distal margin is somewhat excised; the hair-tufts on the anterior femora are absent, the abdomen is more strongly tufted, the tuft on the 2nd ring being especially large. Beside some Indo-Australian species (cf. Vol. XI, p. 121, pl. 15 f, g), one of which is palearctic and at the same time American, there are 5 purely American species chiefly occurring in the tropics.

D. scabriuscula *L.* has been dealt with and figured in the Palearctic Part (Vol. III, p. 163, pl. 38 f). *scabriuscula*. It is a common, unmistakable insect occurring in America from Canada to Texas and Colorado. — The reddish brown larva with yellowish-white stripes lives polyphagously on low plants.

D. patina *Harv.* (= *minorata* *Barn.*) (30 b). Forewing grey, irrorated with blackish-brown, the *patina*. median and its two branches are finely black and bordered with whitish, the transverse lines are double, crenulate, behind the distal line with black and white vein-dots in the somewhat lighter grey postmedian area; the maculae are in whitish rings and surrounded by black; behind the white undulate line there are black internerval streaks dotted white at the ends. Hindwing blackish-brown, at the margin darker. The ♀ is darker with a grey hindmarginal patch. Texas, Arizona, and Mexico.

D. pallida *Dgn.* (30 b) is somewhat similar, but much smaller and lighter, more reddish-brown, with *pallida*. similar though more indistinct markings, the veins finely black-striped and bordered with whitish; the brownish undulate line is only in some places noticeable, above the somewhat lighter anal angle there is a triangular darker patch. Hindwing yellowish white, at the margin brownish. Paraguay.

D. ordinaria *Btlr.* (= *berinda* *Drc.* p. p.) (30 b). Forewing red-brown, in some places, particularly *ordinaria*. postmedianly irrorated with purple blackish, with a reddish-brown hindmarginal patch above it, a black submedian stripe, with black-striped veins, and dentate, partly double transverse lines; the maculae are in grey rings and surrounded by black, outside on the reniform macula with white dots; undulate line whitish with black streaks before and behind it. Hindwing reddish-brown, towards the base lighter. From Mexico to Venezuela and Brazil.

D. lignaris *Schs.* (= *ordinarius* *Btlr.* ♀) (30 c) is much larger and stronger than the preceding and *lignaris*. differs in white-edged median veins and branches as well as in the much more sharply dentate anterior transverse line. Colombia, Brazil.

D. assueta *Btlr.* (30 c) is likewise similar to *ordinaria*, separable by quite dark red-brown hindwings *assueta*. and more greyish-brown forewings darkened by purple brown spots, the marginal area with a yellowish tinge, with red-brown internerval streaks and darker irroration on the discal fold and above the inner angle. From Brazil (Amazons).

D. dolens *Drc.* (30 c) is the largest species and very different from the others. Forewing blackish- *dolens*. brown, in the hindmarginal area except the base, at the apex and inner angle whitish-grey, with black, single, strongly angled transverse lines which are submedianly connected by a black ray, the maculae rather indistinctly marked black; in the dark part of the marginal area there are long black internerval streaks. Hindwing diaphanous white with black ends of the veins. Peru.

4. Genus: **Parastichtis** *Hbn.*

This comprehensive genus, for which the name *Septis* *Hbn.* was recently introduced, as *Parastichtis* has already been used for a Cucullian genus (instead of the former *Amathes*), is very closely allied to the preceding genus. The thoracal scales are intermixed with hairs, and the prothorax and metathorax exhibit parted ridge-like tufts; beside the dorsal tufts the abdomen is laterally hairy. The larvae mostly live well hidden in the ground on roots or low plants and grasses. Cf. Vol. III, p. 163. A remarkable fact is that this genus is almost entirely absent in the Indo-Australian region, where but few species occur in the districts adjoining to the palearctic borders, and in the Khasia Hills (cf. Vol. XI, p. 126 and pl. 16 b). One species is known from Africa.

P. cuculliformis *Grt.* (30 d) is a large, reddish ochreous-brown species with dark-striped veins, rather *cuculliformis*. indistinct, strongly dentate transverse lines, and black and white vein-dots behind the distal line; the indistinctly defined maculae are confluent; a dark red-brown submedian longitudinal patch is traversed by a very oblique light part of the postmedian line. Hindwing light yellowish-brown, at the margin darker. California. — The reddish-brown larva is blackish across the dorsum with light fine longitudinal lines and a strong brown neck-shield which is traversed by 3 light lines.

P. verbascoides *Gn.* (30 c) is similar to the preceding, more contrastingly coloured, the longitudinal *verbascoides*. patch above the hind-margin blackish; the median and the veins of the marginal area are black bordered with white. Hindwing darker. From Canada down to New York.

- nigrior.* **P. nigrior** Sm. (30 d) has more greyish-brown forewings with a whitish costal-marginal area, similarly marked as the preceding, with a black basal ray and a faded black submedian stripe to the posterior transverse line. Maculae more distinct, in grey rings and surrounded by black; the distal transverse line is towards the margin bordered with whitish; in the marginal area there are long black internerval streaks. Hindwing brownish. United States (Maine, New York).
- cariosa.* **P. cariosa** Gn. (= *idonea* Grt., *cluna* Streck.) (30 d) resembles the preceding, but it is darker, the black submedian stripe but very narrow and faint; between the maculae a prominent darker median shadow, the whitish border of the posterior transverse line is absent; the marginal black sagittae are absent, too. Hindwing darker blackish-brown. Canada to Arizona.
- tortilis.* **P. tortilis** Grt. seems to be very little known; according to the kind information by BENJAMIN who can also only judge from a figure of the type, the markings are entirely like those of *Anytus betsia* (p. 77), the anterior transverse line is below the cell so far distally convex that it almost touches the posterior transverse line, still more sharply extended into long points than in *nigrior* and *verbascoides*; but the whole insect makes so much the impression of a species of *Anytus* that it presumably belongs rather to that genus. Washington.
- cristata.* **P. cristata** Grt. (30 d) has ochre-reddish forewings, irrorated with a darker brown, with fine darker veins and a brown bent basal ray; transverse lines very indistinct, the posterior line with double black and white vein-dots, and a whitish, black-edged submedian crescent; the maculae are incompletely surrounded, between both 3 darker streaks in the cell; the marginal area behind the undulate line is tinted red-brown with blackish discal and anal shadings. Hindwing brown, before the margin and on the fringes yellowish. New York, Buffalo.
- vulgaris.* **P. vulgaris** Grt. & R. (30 d) is much greyer and of a duller greyish-brown, otherwise similarly marked, with somewhat more distinct maculae and a more distinct median shadow between them; before the whitish undulate line small dark sagittae. Hindwing greyish-brown. Central and Eastern States (New York to Kansas).
- sora.* **P. sora** Sm. (30 c) is much more variegated, the forewing bluish greyish-white, mixed with blackish-brown and a bright red-brown, in the postmedian area and at the apex light bluish-grey with more distinct transverse lines which are connected by a black prolongation of the coniform macula; the maculae are larger and more distinct, the terminal area behind the undulate line is brown except the light apex. Hindwing brown with yellowish-white fringe; British Columbia.
- lignicolora.* **P. lignicolora** Gn. (30 e). Forewing reddish ochreous, in the costal-marginal and distal-marginal areas of a brighter red-brown with fine black veins; the crenulate transverse lines are not very distinct, at the costal margin double, the distal line with double vein-dots behind it, the maculae are neither very distinct, the reniform macula is proximally produced; before the brown-edged undulate line there are blackish sagittae, behind it the marginal area except the apex is darkened. Hindwing brown, towards the base lighter. — The form **quaesita** Grt. is much greyer, irrorated with purple brown, without ochreous tints, with darker markings and blackish-brown hindwings. — **atriclava** B. & McD. (30 e) is a much more monotonously ochre-brown western race without the bright contrasts, and chiefly discernible by the coniform macula being sharply surrounded by blackish-brown and being absent in the eastern type. Vancouver. — The other forms fly from Canada to Illinois and California.
- antennata.* **P. antennata** Sm. (30 e) is very similar, more blackish-brownish, postmedianly lighter and strewn with whitish, the transverse lines are submedianly connected. California. — The form **purpurissata** B. & McD. (30 g) is of a much deeper purple brown tinge. Vancouver.
- grotei.* **P. grotei** B. & McD. (= *auranticolor* auct. nec Grt.) (30 e) is very closely allied to the genuine *auranticolor* and has often been confounded; HAMPSON's figure designated as *auranticolora* *) also refers to it. The present species has more stretched wings and is more slender, of a less bright ochre-reddish and more monotonous, not so variegated, with a more dentate anterior transverse line, the postmedian line on the discal fold distally concave, above the anal angle with a dark nebulous patch. Colorado, Arizona.
- atrosuffusa.* **P. atrosuffusa** B. & McD. (30 f) is marked very much like *grotei*, but characterized by the deep purple blackish irroration except the basal area, round the maculae, and in the terminal area except the two folds; before the dentate undulate line with a distinct W, as far as the distal margin there are black sagittae. It is possible that this species may coincide with HAMPSON's ab. 1. of his *auranticolora*, in which case the synonym: *washingtoniensis* Strd. would have to be added. Arizona, Colorado, and (doubtfully) Washington.
- auranticolor.* **P. auranticolor** Grt. (30 f) is closely allied to *grotei*; it has shorter, squatter wings of a brighter ochreous colour irrorated with a variegated red-brown, with a less strongly dentate anterior transverse line, and the postmedian line being convex or at least straight, proximally distinctly bordered with black; the dark anal shadow in the marginal area is absent. Colorado, California.

*) Catalogue Lep. Phalaen. Vol. VII. pl. CIX, fig. 30.

P. barnesi *Sm.* (30 f) is extremely similar to *auranticolor*, somewhat smaller, of a more yellowish-brown colour on the greyish-white ground, the central area prominently darker, the marginal area darker brown except the apex. South Dakota, Wyoming, Yellowstone Park, Colorado.

P. genialis *Grt.* (30 e) is likewise similar to the preceding, but much lighter and more monotonously ochre-reddish with very faint markings and without the black streak connecting the transverse lines on the fold; the posterior transverse line is distally bordered with some whitish colour; the yellowish-white undulate line has a distinct W as far as the margin, above and below it with grey vein-streaks. Hindwing light reddish-brown, in the ♀ darker. California.

P. vultuosa *Grt.* (30 f) is much smaller than *genialis*, light ochre-brownish, at the costal margin and behind the undulate line irrorated with blackish-brown, in the marginal area with black veins; the black irroration extends on the two folds to the postmedian line. Hindwing ochreous-grey, towards the margin darkened. Canada to New York.

P. dionea *Sm.* (30 f). Forewing grey with a violet tint and in some places irrorated with blackish-brown, with a black basal ray, double black transverse lines, with vein-dots behind the distal line, and a connecting streak from the pointed coniform macula; the maculae are in whitish rings and encircled with black; behind the light undulate line the marginal area is blackened and black-striped, before it single black sagittae. Hindwing brown. Wisconsin, Dakota.

P. apamiformis *Gn.* (= *contenta* *Wkr.*) (30 g) is somewhat similar, larger, purple reddish strewn with greyish-brown and dark, the anterior transverse line indistinctly double, the black connecting streak on the submedian fold is absent; outside below at the reniform macula there are 2 white dots. Hindwing blackish-brown. A common species from Canada to Colorado. — The larva is light brown, shaded with a darker colour, with light longitudinal lines, the dark brown neck-shield is parted by a light colour.

P. multicolor *Dyar* (30 g) is very similar to *apamiformis*, but it is very much irrorated with blackish, particularly in the central area, the double transverse lines are filled up with grey, the coniform macula is hardly noticeable, at the reniform macula outside a strong white crescentiform streak. Hindwing brown, at the margin darker with a dark central lunula. Canada to California.

P. plutonia *Grt.* (30 g) is the darkest species, brownish-black with lead-coloured grey irroration; at the base of the costal margin and on the discal fold tinted reddish-brown; maculae in faint whitish rings; instead of the undulate line there are reddish-brown and black sagittae. Hindwing dark brown. Canada; United States as far as New Mexico.

P. occidentis *Grt.* (30 g) is a very large, more variegated species; forewing greyish-white, irrorated with blackish-brown, in the disc reddish-brown, behind the postmedian line lighter with darkened veins and with double transverse lines filled up with whitish; the maculae are grey-centred and in whitish rings; behind the whitish undulate line the marginal area is very much darkened. Hindwing brown, veins and marginal line darker. Colorado (Durango), Nevada, California. — In f. *coloradensis* *Strd.* (= ab. 1 *Hmps.*) the central area and the dorsal ridge on the thorax is not irrorated with brownish-red. Colorado, California.

P. albina *Grt.* (30 g) is very closely allied to the preceding, with more ochre-brownish forewings, tinted with red-brown and blackish, postmedianly irrorated with whitish, towards the hind-margin bluish; the double transverse lines are filled up with grey and submedianly connected by black; behind the whitish undulate line with a distinct W the marginal area is darkened, in front of it there are some black sagittae. Hindwing reddish-brown with a central spot, postmedian line, and a broad subterminal band. California.

P. castanea *Grt.* (= *cymosa* *Grt.*) (30 h) is darker than the preceding, postmedianly not lighter, otherwise marked almost the same; the reniform macula is outside ochreous, below with 2 white dots; behind the ochreous undulate line being proximally edged with red-brown the marginal area is darkened by purple blackish. Hindwing ochre-brownish marked as in *albina* (30 f). Canada to California. — In f. *cymosana* *Strd.* (= ab. 1. *Hmps.*) the postmedian area is lighter yellowish.

P. arctica *Bsd.* (= *amputatrix* *Fisch.*, *amiea* *Harr.*, *pluviosa* *Wkr.*) (30 h) is a well-known large and beautiful, variegated species, purple brown, strewn with greyish-white, in the basal hindmarginal area yellowish-white like in the distal half of the postmedian area, the double transverse lines are filled up with whitish-grey, the reniform macula below with 3 white dots. Hindwing greyish-brown, at the margin darker. Labrador to Colorado and California. — ab. *formosa* *Ellsworth* is based upon a dark ♀ in which the whitish colour is replaced by slate-coloured grey.

P. alia *Gn.* (= *suffusea* *Morr.*) (30 h) is a variable species, purple grey, in the costal area tinted red-brown sometimes as far as down to the submedian fold, the transverse lines indistinctly double, the maculae in grey rings, the reniform macula centred brown; before the undulate line there are proximally on the folds blackish spots, behind it the marginal area is darkened by brownish. — f. *rorulenta* *Sm.* (30 h) has a more blackish darkened marginal area, and the reniform macula is also centred blackish. Canada to Colorado.

5. Genus: **Trachea** O.

Chiefly separated from the preceding genus by the thorax being almost purely clad with scales, with parted tufts in front and behind. The genus contains a great number of mostly beautifully coloured and marked Noctuids, frequently intermixed with moss-green, from North and South America. A great number of species of this genus, moreover, also occur in the palearctic and Indo-Australian region (cf. Vol. III, p. 187, and Vol. XI, p. 131).

- illocata*. **T. illocata** Wkr. (= *stigmata* Grt.) (30 h) is the only American form with long-combed antennae. Forewing greyish-brown, particularly below the cell irrorated with a brownish red, the veins striped blackish; transverse lines more or less distinctly double, filled up with light grey and connected by a black prolongation of the coniform macula; maculae whitish, centred darker and finely surrounded with black; the whitish undulate line is on both sides bordered with brown. Hindwing blackish-brown with a coppery reflection. Canada to Colorado.
- atritornea*. **T. atritornea** Hmps. (30 i) is an easily recognisable species, white, in some places irrorated with olive green, purple brown and black, with dark transverse lines, the posterior line being double, and large green and white maculae, below them a large white wedge-shaped spot; behind the undulate line with 3 black spots in the marginal area, the largest at the inner angle. Hindwing blackish-brown. From Colombia.
- toxaridia*. **T. toxaridia** Drc. (30 i) also has white forewings in some places tinted olive-yellow and purple brown, with blackish-striped veins and black transverse lines, the distal line behind the cell and at the hindmargin bordered with violettish-white; the maculae are olive-yellow and black-centred; before the undulate line extends a broad blackish-brown band, behind it small white, distally olive-yellow lunae. Hindwing blackish-brown. Mexico.
- leucodonta*. **T. leucodonta** Hmps. (30 i) is a very common species, on the forewing grey, mixed with blackish-brown and olive-greenish and strewn with black, with double transverse lines filled up with grey, and between the olive-yellow, black-centred and ringed maculae a whitish spot which is continued downward like a wedge; behind the whitish undulate line there are three triangular blackish-brown marginal spots. Hindwing whitish with a blackish-brown marginal band. — In f. **aqualani** Strd. (= ab. 1. Hmps.) the white spots between the maculae are grey. Peru.
- supera*. **T. supera** Schs. is somewhat similar, on the forewing in the basal area, costal margin, and the round reniform macula as well as subterminally green, otherwise greyish-brown or blackish-brown with crenulate black transverse lines, the posterior line distally of a dull lilac and then shaded with dark olive-brown. Hindwing greyish-brown, at the base whitish. Costa Rica.
- delicata*. **T. delicata** Grt. (= *interna* Grt.) (30 i). Forewing purple blackish-brown, basal area, hindmargin and costal margin towards the apex olive-green like the macular bordering and the undulate line, between the maculae with a reddish-white spot extending to below the cell; the blackish transverse lines are not very distinct; the darker shaded green undulate line turns more whitish analwards. Hindwing brownish-grey, at the margin darker, analwards whitish. Canada, United States.
- anguliplaga*. **T. anguliplaga** Wkr. (30 i) is very similar to *leucodonta*, the ground-colour is much lighter violettish-grey or reddish-grey; the reddish-white splintered spot behind the ring-macula and coniform macula is bipartite at its lower end and does not extend to the reniform macula before which there is another black spot; the undulate line is green; hindwing of a purer white with a light brownish-grey marginal band. From Brazil, Paraguay, and Argentina.
- malezieuxi*. **T. malezieuxi** Dgn. (30 k) differs from the preceding in the white not green undulate line and less green admixture; the double transverse lines are filled up with a lighter whitish-grey, and the whitish spot between the maculae is much narrower and longer and extends almost up to the costal margin. On the white hindwing the dark marginal band is very much broader. Ecuador.
- uscana*. **T. uscana** Drc. (30 k) is a larger species with olive-green forewings mixed with red-brown, with grey-striped veins and double transverse lines; behind the elliptical green, black-centred ring-macula there is, like in the preceding, a reddish-white splintered spot which terminates in two points at the lower end; the very large reniform macula is reddish-white, irrorated with red-brown, with a black spot below inside; the undulate line is green, proximally shaded with red-brown and distally with blackish triangular spots on the discal and submedian folds. Hindwing whitish, distally greyish-brown. Costa Rica.
- viridis*. **T. viridis** Drc. (30 k) is much smaller, on the forewing light bluish-green, in some places irrorated with red-brown, with white transverse lines being interruptedly bordered with black on the inverted sides; the maculae are small white-ringed spots; before the white undulate line there are small black spots, on the margin black, inside white dots. Hindwing black with a coppery reflection. Costa Rica.
- smaragdina*. **T. smaragdina** Neum. (30 k). The brown forewing is tinted emerald-green in the basal, costal-marginal and distal-marginal areas, the embedment of the double transverse lines, the maculae, and the undulate line are likewise green. The grey hindwing is broadly brownish at the margin. Arizona.

T. mnionia Dgn. Forewing brown, mixed with moss-green and reddish, the veins partly irrorated with white, with thick brown transverse lines; the whitish maculae irrorated with green are confluent below, the large ring-macula is quadrangular, between and behind the maculae as well as submedianly as far as the hindmargin, the ground-colour is brown; like in *toxaridia* (30 i) there is a broad postmedian band irrorated with reddish and brown, behind it there are 3 brown marginal spots. The ♀ is much darker. Hindwing blackish with yellowish fringes. Expanse of wings: 30 mm. Colombia (Mt. Socorro; Quindiu).

T. punctisigna Dgn. has black forewings, with green spots at the costal margin, the distal line partly flesh-coloured, behind it with a broad band being flesh-coloured mixed with green and strewn with black, towards the costal margin warming into a lustrous violettish black, distally defined by the distinctly white-dentated undulate line; the extrabasilar line and the anterior transverse line are united at the hindmargin below a lustrous violettish-black spot; the maculae are light green, the reniform macula is distally spotted white; at the distal margin there is a series of violettish-black vein-dots connected by a green line. Hindwing yellowish with a broad blackish marginal band. Expanse of wings: 30 mm. Colombia (Quindiu Pass).

T. eugrapha Jones (30 k). Forewing red-brown, tinted grey, in some places irrorated with blackish-brown, the distal hindmarginal half and the embedment of the double transverse lines somewhat greenish with somewhat lighter ringed, blackish-encircled maculae; the short broad coniform macula is also present; between them extends a thick, strongly bent median line; before and behind the grey undulate line, which is proximally shaded with brown, there are small black sagittae above and below the middle radial; the anal angle is shaded with black. Hindwing brown, at the margin darker. Brazil.

T. stieglmayri Zerny (33 h) is wood-coloured on the forewing, in the central area somewhat darker with black, feebly crenulate transverse lines, brown maculae surrounded with black, the reniform macula bordered with a light yellowish-brown; the light brownish-yellow undulate line is proximally bordered by small blackish triangular spots. Hindwing yellowish-white, at the costal margin and hindmargin brownish, with a dark postmedian line. Brazil (Rio Grande do Sul).

T. marina Grt. (30 k) has moss-green forewings mixed with olive-brown and strewn with black, with purple grey and white irrorated veins and black crenulate transverse lines on the averted sides bordered with whitish. The maculae are small, centred with greenish, the undulate line is light, proximally in some places shaded with dark. Hindwing brownish-grey. California.

T. semilunata Grt. (30 k) has greyish-brown forewings strewn with white, the crenulate transverse lines bordered with whitish, the maculae in whitish rings, without borders, and a whitish two-pointed splinter-shaped spot behind the coniform macula; the white undulate line shows a distinct W as far as the margin. Hindwing orange-yellowish with a dark central luna and marginal band. Washington, Colorado.

T. inordinata Morr. (31 a) is larger than the preceding, with somewhat similar markings and colours, the type in the central area more reddish, the distinctly double transverse lines are filled up with white and connected by a black prolongation of the coniform macula above which a light splinter-shaped spot is situated; before the undulate line are black sagittae, the veins forming the W are somewhat more distinctly white-striped. Hindwing yellowish with a dark central luna, postmedian line, and marginal band. — The form **columbiae** Strd. (= ab. 1. *Hmps.*) lacks the reddish tint in the central area, and the hindwing is more yellow. From British Columbia. — f. **montana** Sm. (31 a), from Colorado, is lighter, the markings are finer and less deeply black, the sagittae before the undulate line are extinct. The species is besides distributed in Canada and the United States.

T. miselioides Gn. (31 a) is well characterized by the quite round, mostly quite white reniform macula, the forewing being green mixed with brown, with grey and white striped veins, indistinctly double transverse lines filled up with whitish, the maculae surrounded with blackish; before the indistinctly lighter undulate line there are small brown sagittae. Hindwing brownish-grey. New York to Texas. — **miscellus** Sm. is blackish-brownish and grey without green tints. — The velvety-green larva with a white lateral line lives on *Smilax rotundifolia*.

T. macerata Sm. (31 a) is on the forewing yellowish mixed with greenish, in the central area darkened, with double interrupted transverse lines and whitish, greenish-centred maculae, from the pointed coniform macula a dark shadow extends to the posterior transverse line, in the marginal area with yellowish elliptical spots between the grey-striped veins; no undulate line. Hindwing brownish-grey. Canada.

T. cinefacta Grt. (31 b). Forewing light brown, strewn darker, in the basal area, postmedianly, in the lower half of the central area and at the apex irrorated with bluish-white, with a black basal ray, and crenulate transverse lines bordered with whitish and submedianly connected by black; maculae in whitish rings, the ring-macula oblique elliptical, the reniform macula below inwardly produced; instead of the undulate line small white spots with small black sagittae before them, forming a W below the centre. Hindwing greyish-brown. Canada to Colorado. — f. **albertae** Strd. (= ab. 1. *Hmps.*), from Alberta, exhibits the transverse lines interrupted and along the hindmarginal vein connected by white; the undulate line is net interrupted, and the small sagittae before it are absent.

- parcata.* **T. parcata** Sm. (31 a) is of a more yellowish ground-colour than the preceding, with much less distinct markings, without the whitish irroration and without the black streak connecting the coniform macula and the posterior transverse line; the undulate line is only conspicuous by the contrast of the greyer marginal area and forms a W. Hindwing dull brownish-grey. Yellowstone Park.
- unita.* **T. unita** Sm. (31 b) is somewhat larger than the two preceding, in the central area brown, with double transverse lines filled up with whitish, connected by a black prolongation of the apex of the coniform macula; the maculae are large, in white rings and surrounded with an intense black, the oblong ring-macula touches the centre of the reniform macula; before the white undulate line with a distinct W in the centre small dark spots. Hindwing greyish-brown with a darker marginal band. Canada, Oregon.
- spaldingi.* **T. spaldingi** Sm. (= *umbrifacta* Hmps.) (31 b) is marked very much like *unita*, but it is more bluish-grey mixed with brown, the transverse lines are not filled up with whitish, the black submedian streak is broadly shaded with brown, between the undulate line and the margin shaded with red-brown. The whitish hindwings are brownish, more intensely so on the veins and margin. Utah.
- centralis.* **T. centralis** Sm. (31 b) is very similar to *unita*, discernible by the anterior transverse line distally forming a very long tooth on the submedian fold; intense bluish-white irroration is arranged as in *cinefacta*. Hindwing light brownish, on the veins and margin darker. Oregon, Sierra Nevada.
- turbulenta.* **T. turbulenta** Hbn. (= *arcuata* Wkr.) (31 b). Forewing red-brown mixed with blackish-brown, in the central area darker, behind it lighter, except the costal-marginal part, with a black basal ray, the transverse lines bordered with reddish, and small lighter reddish maculae, the coniform macula varying in size, occasionally extending to the postmedian line; the light undulate line is very indistinct, analwards parted by a dark streak. Hindwing greyish-brown, towards the margin darker. Expanse of wings: 34 to 44 mm. Eastern and Central States as far as Florida. — The larva is narrowly striped black and white, on the ventrum reddish white, with a velvety black neck-shield, and on the two last rings with round white spots; it lives on Smilax.
- tusa.* **T. tusa** Grt. (31 b) is very similar to *turbulenta*, more purple brown and grey, in the basal area olive-brown submedianly as far as the posterior transverse line, the transverse lines indistinctly double, in the marginal area darkened, traversed by the light undulate line. Hindwing yellowish brownish-grey. From California.
- indocilis.* **T. indocilis** Wkr. (= *remissa* auct.) (31 c) recalls the palearctic *P. obscura* (= *gemina*, cf. Vol. III, p. 168) in its more variegated forms. Forewing brownish-grey, mixed with red-brown, in the central area dark purple brown as far as the submedian fold, with a basal ray, indistinctly double transverse lines, and black and white vein-dots behind the distal line, with a strong black submedian connecting streak, and lighter ringed maculae; the whitish undulate line being proximally shaded with brown exhibits a distinct W as far as the margin, behind it there are blackish triangular spots on the two folds. Hindwing brownish-grey, towards the margin darker. Canada to New York.
- mactata.* **T. mactata** Gn. (31 c). Forewing brownish-grey, strewn with black, postmedianly lighter, with a black basal ray, double transverse stripes filled up with whitish and submedianly connected by black; the large maculae are centred brown, the light undulate line with a W is proximally bordered by brown sagittae. Hindwing brownish-grey with a bent postmedian line. Canada to Colorado. — The form **allecto** Sm. (31 c) is only in the central area feebly tinted brownish, otherwise grey and black. From Alberta, British Columbia, Dakota.
- ferida.* **T. ferida** Sm. (31 c) is somewhat larger than the preceding, more mixed with red-brown and blackish-brown, the hindmarginal half of the central area much darker; the double transverse lines filled up with grey, the undulate line only composed of small whitish lunae, otherwise marked like the preceding. New Foundland.
- separans.* **T. separans** Grt. (= *ferens* Sm.) (31 c) is similar to *ferida*, greyer, strewn with dark brown, at the costal margin, in the central area down as far as the submedian fold, and in the marginal area except the apical part darkened with purple-brown, the dark-centred maculae and the embedment of the double transverse lines more whitish, before the white undulate line with a W there are small black sagittae. Hindwing yellowish-brown with a central spot and postmedian line. New York, Wisconsin. — The form **lona** Streck. (= *runata* Sm.) (31 c) is darker in the central area as far as the hind-margin, but towards the costal margin somewhat lighter, in the postmedian area lighter, particularly towards the hindmargin. Canada; New York; Washington.
- perpensa.* **T. perpensa** Grt. (31 c) is browner than the preceding, the double transverse lines filled up with a hardly lighter colour, the ring-macula is very long and oblique, above open and below connected with the reniform macula, the latter distally with a small white luna; the whitish undulate line is faded, behind it there are long black internerval streaks. Hindwing light brown, towards the margin darker. New Mexico, Arizona.
- divesta.* **T. divesta** Grt. (31 d) is a light reddish ochre-brown species, in the central area somewhat more reddish, with a black basal ray, single transverse lines being on the averted sides bordered with whitish, submedianly connected by an intense black; the lighter yellowish maculae are surrounded by black; before the whitish undulate line proximally with small black sagittae, behind it with blackish triangular spots on the folds. Hindwing light yellowish-brown. The ♀ is greyer. Canada to Colorado and California.

T. finitima Gn. (31 d). Forewing reddish-grey, in the central area more red-brown, with a black *finitima*. basal ray, indistinctly double transverse lines filled up with a greyer colour, large maculae in whitish rings and surrounded by black, and with a light undulate line proximally shaded with brown. Hindwing greyish-brown, with darker veins and margin. Canada to Colorado. — **cerivana** Sm. (31 d) differs in its purer grey *cerivana*. ground-colour with scarcely reddish admixture. From Manitoba and Alberta in Canada.

T. fumosa Grt. (31 d). Forewing blackish-brown, strewn with grey, without a basal ray, with double *fumosa*. dentate transverse lines, a large coniform macula surrounded by black, and large upper maculae; behind the lighter undulate line there are dark streaks in the marginal area. Hindwing greyish-brown. Colorado.

T. fumeola Hmps. (= probata B. & McD.) (31 d) is very similar to *fumosa*, on an average somewhat *fumeola*. smaller, submedianly as far as the posterior transverse line with a slight flesh-coloured reddish tint, the same before and behind the reniform macula; the posterior transverse line is on the discal fold bent inwards towards the base, in *fumosa* not. Hindwing much darker. California, Arizona.

T. perfumosa Hmps. (= fumeola Hmps. ♀ nec ♂) is so very similar to *fumeola* that HAMPSON *perfumosa*. described it as the female of *fumeola*. The anterior body is darker, the collar with a black median line; the forewing is likewise darker, more blackish-brown and less grey, the hindwing is darker blackish-brown with grey irroration, the male being likewise similar. Expanse of wings: 40 mm. California.

T. binotata Wkr. (= extensa Wkr., rubiginosa Wkr.) (31 e). Forewing dark blackish irrorated with *binotata*. purple brown on the grey ground, with a feeble basal ray, double transverse lines filled up with grey, the maculae in grey rings and surrounded by black, the ring-macula above open, behind the reniform macula with a light lunar spot, the whitish undulate line in the upper half traversed by black streaks. Hindwing greyish-brown. Canada to California. — The form **curvata** Grt. has a stronger, more bent basal ray. — The larva is green with *curvata*. yellowish-white longitudinal lines, the stigmatal above on the last ring bordered with red; it lives on Ribes.

T. adnixa Grt. (31 e) has greyish-brown forewings in some places irrorated with reddish, particularly *adnixa*. before and behind the central area with a black basal ray, single transverse lines being on the averted sides bordered with grey, with grey, dark-centred maculae surrounded by black, between them a brown median line, and a light spot behind the reniform macula; the undulate line like in *binotata* traversed by black streaks. Hindwing greyish-brown with a dark central luna and postmedian line. United States as far as California.

T. paviae Behr (= inconspicua Sm.) (31 e). Forewing reddish brownish-grey, strewn with a darker *paviae*. colour, with a black basal ray, double transverse lines filled up with grey; the maculae are above and below open, behind the reniform macula with a lighter spot, without a median line, before the light undulate line with small black sagittae. Hindwing brownish-grey. From California.

T. pausis Sm. (31 e) is a smaller greyish-brown species with a strong black basal ray, indistinct *pausis*. transverse lines being on the averted sides bordered with grey, and whitish, dark-centred maculae, the reniform macula on the median inwardly produced, behind it a light grey spot; behind the indistinct grey undulate line black internerval streaks. Hindwing light brownish with a dark central spot. California.

T. genetrix Grt. (31 e). Forewing yellowish-grey, strewn with dark and in some places irrorated with *genetrix*. brown with a faint black basal ray, single transverse lines bordered with grey, indistinctly surrounded maculae with a light spot behind the reniform macula and a whitish undulate line. Hindwing yellowish greyish-brown. The ♀ is greyer without a yellowish tint. Colorado, Nevada. — The olive-green larva is provided with white longitudinal lines which are partly bordered with reddish, and lives on Adenostoma fasciculatum.

T. dilara Streck. (31 d) is very similar to *genetrix*, larger, lighter, of a more flesh-coloured tint, strewn *dilara*. with yellowish brown, the transverse lines bordered with whitish, the maculae surrounded with brownish, and with a light undulate line proximally shaded with brown. Hindwing yellowish brown. Colorado.

T. cara B. & McD. (31 e) by its marking very much resembles *adnixa* (31 d), but the black anal *cara*. ray is absent, the colour is a darker purple red-brown, irrorated with ochreous-yellow, the double transverse lines filled up with ochreous, also the maculae in ochreous rings, with an ochreous spot behind the reniform macula, in the subterminal area of a purer purple reddish. Hindwing smoke-coloured grey, the fringes somewhat reddish. Utah.

T. indirecta Grt. (31 f) is characterized by light reddish-brown forewings particularly darkened purple *indirecta*. reddish in the central area, the transverse lines bordered with whitish, connected by white on the hindmarginal vein, above it on the submedian fold with a black connecting streak, with lighter-ringed maculae and a white undulate line proximally shaded with red-brown, and a black wedge-shaped spot on the submedian fold, in the marginal area irrorated with black. Hindwing yellowish greyish-brown. Canada to Washington.

T. catalina Sm. (31 f) is marked like the preceding, but without the black ray on the submedian *catalina*. fold in the central area; the ground-colour is more yellowish flesh-coloured, in the central area rather lighter, the maculae darker, centred blackish. Hindwing lighter brown, at the margin slightly darkened. California, Arizona.

- characta*. **T. characta** Grt. (31 f). Forewing greyish-white, strewn with black, basal and central areas irrorated with ochreous-brown, before and behind the latter more whitish, in the marginal area darker with a black basal ray and white-edged transverse lines which are submedianly connected by the long, pointed coniform macula surrounded by black; the white maculae are dark-centred and surrounded by black, the ring-macula is obliquely elliptical; before the dark-shaded undulate line there are small black sagittae. Hindwing brownish-grey. Nevada, Arizona. — In the form **erica** Sm. (31 f) the black submedian ray in the central area, and the hindmarginal half of the antemedian and postmedian areas, as well as an oblique patch from the reniform macula to the apex are quite light yellowish-white. Described from Utah.
- pluraloides*. **T. pluraloides** McD. is on the forewing light ochreous with grey irroration chiefly along the costal margin, distal margin, and hindmargin. Transverse lines quite extinct; the narrow oblique ring-macula is surrounded by white, the small, dark-centred reniform macula is inside bordered with black, outside with white, the coniform macula is long and narrow; postmedianly in the lower half grey irroration; undulate line light, distinct, behind it the marginal area is darkened. Hindwing whitish, veins and margin somewhat smoky. Expanse of wings: 32 mm. The exterior of this species, described from Alberta, recalls *Euxoa pluralis*. (6 k).
- jocasta*. **T. jocasta** Sm. (31 f) is somewhat similar to *pluraloides*, but it is more yellowish-grey, the anterior transverse line is double, filled up with whitish, the reniform macula is not strangulated as in *characta* and only proximally bordered with black; the small sagittae before the undulate line are quite indistinct or absent, the marginal area behind it is somewhat darker. Hindwing light brownish. Illinois; Chicago; South Dakota.
- luteocinerea*. **T. luteocinerea** Sm. (31 f). Forewing light yellowish-grey, in the costal part whitish, with a black basal ray, the transverse line only noticeable at the costal margin, in its further course only marked by the contrast between the yellowish ground of the wing and the dark, greyish-brown central area, both being connected by the large, pointed coniform macula; the white maculae are surrounded by black, the ring-macula is obliquely elliptical; the marginal area behind the yellowish undulate line is darkened. Hindwing whitish. Montana.
- susquesa*. **T. susquesa** Sm. (31 f) is a small reddish ochreous-brown species in the central area with a greyer tint, the anterior transverse line only marked by this contrast and blackish vein-streaks, the posterior line, which is submedianly connected with it by the coniform macula, is finely dentate; the upper maculae are grey-pupilled and in yellowish-rings; the undulate line consists of small reddish-brown sagittae. Hindwing brownish-grey. California.
- monica*. **T. monica** B. & McD. (31 g) is very similar to *susquesa* and may be merely a somewhat larger race of it; the ground-colour is much deeper and almost without any light brownish tints which are only prominent behind the coniform and reniform maculae and are almost whitish; the marking is somewhat more indistinct, single veins in the marginal area are marked white. Hindwing somewhat lighter. Arizona.
- serrula*. **T. serrula** B. & McD. (31 g) is likewise closely allied with *susquesa*, but it has serrate antennae in the ♂; the ground-colour is dark grey instead of brownish and the posterior transverse line is situate nearer to the reniform macula; only behind the latter and the coniform macula there is a lighter, ochreous area. Hindwing almost whitish, only the veins and margin are somewhat brownish. California.
- bullata*. **T. bullata** Sm. has wrongly been united with *dilara* (31 e) by HAMPSON; it is a distinct species. Forewing on the reddish-yellow ground irrorated with a slightly coppery brownish, with single brown, whitish-edged transverse lines; the large broad coniform macula is surrounded with coppery brown, like the large upper maculae; the light undulate line is only traceable. Hindwing yellowish-brown. Expanse of wings: 35 to 38 mm. Colorado, in June, July.
- modica*. **T. modica** Gn. (= *subcedens* Wkr.) (31 g) is a very common insect, light greyish-brown with a darker central area, behind it more whitish, with indistinctly double transverse lines and whitish maculae surrounded by black; undulate line indistinctly lighter, proximally shaded with olive-brown. Hindwing yellowish-brown. Canada to Colorado.
- mustelina*. **T. mustelina** Sm. (31 g) is similar, lighter, more bluish-grey, easily recognised by the chocolate-brown head and collar; transverse lines double, the cell between the whitish maculae darkened blackish; before the undulate line blackish scaling, the marginal area behind it darkened. Hindwing light brown. California. — Larva yellowish-brown with a distinctly defined, broad, yellowish-white lateral band.
- ethnica*. **T. ethnica** Sm. (31 g) is a large, greyish-brown species, with hardly visible double transverse lines, the posterior line only marked by dots, and the maculae also very indistinctly surrounded, the undulate line proximally shaded with a somewhat darker colour. Hindwing blackish-brown. California.
- commoda*. **T. commoda** Wkr. Forewing blackish-brown, irrorated with purple grey and strewn with whitish, with very indistinct, somewhat grey-edged transverse lines, without the coniform macula, with lighter-ringed upper maculae; the undulate line consists of lighter small spots with darker small sagittae before them and dark internerval streaks behind them. Hindwing greyish-brown, at the margin darker. Canada; United States. — *commoda* is the eastern form from Ontario and Manitoba, generally with a more ferruginous reddish-brown colouring on the forewing than in the Alberta-race which is figured by HAMPSON as *commoda* and which is to

be denominated: **alberta** Sm. (31 g). — **illustra** Sm. is another form or perhaps also a species from Alberta, *alberta*, extremely similar to *alberta*, but much darker, almost black, the transverse markings more or less extinct. — *illustra*, **enigra** Sm. (31 h) is another closely allied form or species, coloured like typical *alberta*, but somewhat smaller, *enigra*, with mostly somewhat more distinct markings; it is probably a synonym of *alberta*.

T. geminimacula Dyar (31 h) is a large brownish-grey species strewn with black, with rather *geminimacula*, indistinct transverse lines being on the averted sides bordered with grey, behind the distal line with a double row of black and white vein-dots, the maculae surrounded with blackish, the reniform macula below outside with 2 white dots; instead of the undulate line there are small white sagittae proximally bordered with blackish. Hindwing light brownish, veins and margin darker. Colorado, New Mexico.

T. impulsa Gn. (31 h) is similar, but deeper purple blackish, with a black basal ray and black transverse *impulsa*, lines without grey scales; the reniform macula shows outside a small white lunar streak with white dots above and below it. Hindwing light brown. Canada to Texas.

T. mixta Grt. differs from *impulsa* in its more brownish ground-colour with a purple tint, more *mixta*, white at the reniform macula, the small sagittae before the undulate line forming more a coherent proximal border. From California.

T. nigrescens Schs. (31 h) is closely allied to *impulsa*; forewing dark brownish-grey, postmedianly *nigrescens*, tinted brownish, with rather indistinct double black transverse lines, the anterior line below the cell being threefold; the large maculae are surrounded by black, the reniform macula is whitish, strewn with yellow, before it a grey and a dark line; behind the somewhat lighter undulate line dark internerval streaks extend to the margin. Hindwing in the basal half opalescent white, thinly scaled, at the margin broadly darkened with greyish-brown. Mexico, Costa Rica.

T. altivolans Schs. Forewing light brown, in the basal half irrorated with lilac-grey; ring-macula *altivolans*, with a long tooth towards the base, the reniform macula in a light reddish-brown ring with a bent dark median streak; a fine black basal ray bends round in the centre of the wing, is angular on the submedian and then turns again distally towards the hindmargin; the posterior transverse line is dentate, with dark vein-streaks behind it. Hindwing light reddish-brown. Costa Rica.

T. espumosa Dogn. (31 h) is a large red-brown species being more grey in the marginal area, with *espumosa*, double interruptedly dentate transverse lines which are submedianly connected by black; the ring-macula is a small yellowish spot, the indistinct reniform macula outside shows a small yellowish luna with dots below and above it; instead of the undulate line there are small blackish sagittae. Hindwing reddish-brown. Described from Ecuador.

T. polychroa Hmps. (31 i) is much smaller, but otherwise in the marking not dissimilar, the red- *polychroa*, brown colour mixed with sap-coloured green, the reniform macula is a green spot with another spot behind it; both the oblong maculae are light, surrounded by blackish; behind the undulate line the marginal area is darkened. Hindwing brown with green fringes. Chile.

T. xylophila Wkr. (= infelix Drc.) (31 i) is very wide-spread and common in the tropics, recognisable *xylophila*, by the blackish-brown basal half against the light reddish-brown or whitish-brown distal half with a subapical dark costal-marginal spot; transverse lines double, dentate, behind the distal line with vein-streaks, behind the undulate line with dark vein-streaks joined in the direction from the margin by small internerval streaks. Hindwing in the ♂ light, in the ♀ dark brown. Mexico to Venezuela.

T. lacruma Schs. (31 i) is allied to *xylophila* and at once discernible by a large dark central luna *lacruma*, of the hindwing; ground-colour somewhat greyer, the distal border of the dark basal part runs less obliquely by extending at the hindmargin farther towards the distal margin. Brazil, Argentina.

T. roseae Schs. Forewing light reddish-brown, strewn with black, with slate-coloured veins, in the *roseae*, basal area with 2 oval dark brown spots bordered with black, the anterior half of the central area is slate-coloured, edged by black undulate transverse lines; ring-macula horseshoe-shaped, reniform macula narrow, below behind it small heaps of white scales; the posterior transverse line is double; before the white undulate line in the centre darkened black in the shape of a band. Hindwing light brownish. Galapagos Islands.

T. mancilla Schs. which is doubtfully listed in this genus, has the blackish-brown ground-colour *mancilla*, divided into large spots finely bordered with white; basal area narrowly white, parted by black; behind it follows a greenish-white band parted above and below and faded below the cell; the ring-macula is a black dot, the large reniform macula is blackish-brown; behind the vertical postmedian line which expands behind the cell and contains a triangular spot, there are two large spots. Hindwing dark brown. Guatemala (City).

6. Genus: **Paratrachea** *Hmps.*

Distinguished from *Trachea* by the thorax being clad with hairs and hairlike scales; all the rest, also the parted tufts, the same. But one American species:

- laches.* **P. laches** *Drc.* (31 i). This beautiful large insect, with violet wings interspersed with brown and green, is unmistakable; below the cell before the antemedian line a large, quadrangular, blackish-brown spot, bordered with olive-yellow, a similar triangular spot is between the maculae, a third oblong spot behind the hindmarginal half of the postmedian line. Hindwing yellowish red-brown. Panama, Colombia, Peru.

7. Genus: **Euplexia** *Stph.*

Separated from *Trachea* by loose tufts on the prothorax and metathorax which are covered with scales; the abdomen exhibits a row of tufts, of which that on the 3rd ring is particularly large; the last rings exhibit lateral hair-tufts. Beside numerous eastern species (cf. Vol. XI, p. 134 to 149), America has also three closely allied representatives.

- triplaga.* **E. triplaga** *Wkr.* (= *roseola* *Fldr.*) (31 i). Forewing red-brown, tinted with purple, in the central area darker, bordered by the threefold anterior transverse line; the reniform macula is whitish, centred brown; behind it the wing is yellowish, hued with pink, towards the margin in the centre irrorated with grey, at the costal margin brown; the margin is purple behind the dark brown undulate line. Hindwing whitish, at the margin brownish. Mexico, Panama, Venezuela.
- benesimilis.* **E. benesimilis** *McD.* (= *lucipara* *auct.*) (31 i) is the American representative of the palearctic *lucipara* (Vol. III, pl. 43 i) and was hitherto taken to be identical with it, but, as TAMS has proved, the genitals are different, and there are also differences in the exterior; the colouring is somewhat dimmer, the distal bordering of the dark central area runs more obliquely inwards to the hindmargin, and the postmedian forms a more pointed angle distally between the lower radial branches. Canada down as far as New York. — I cannot decide whether *exotica* *Strd.* means the same; but if this be the case, this name would take the precedence.
- brillians.* **E. brillians** *B. & McD.* (31 k) is very closely allied to the preceding, but of much brighter and variegated colours, the central area dark bronze-green contrasting with the yellowish basal and postmedian areas which are hued with pink, with a conspicuous triangular light subapical spot which is absent in *benesimilis*. Described from Arizona.

8. Genus: **Viridemas** *Sm.*

Proboscis stunted; frons with an erect, blade-shaped horny protuberance extending straight to the end of the rough hairing; palpi very short and feeble; ♂ antennae feebly serrate with ciliary tufts, in the ♀ plain; thorax covered with scales and hair-scales, on the metathorax more densely gathered together like a tuft; abdomen tufted, the tuft on the 3rd ring being larger than the others. Only 2 small species:

- galena.* **V. galena** *Sm.* Forewing ash-grey, irrorated with green, particularly in the basal area, here with a black transverse line; the anterior transverse line is single, black, almost straight, the posterior line interruptedly dentate, behind it submedianly a large greenish-white spot; the interrupted whitish undulate line is proximally shaded with black; the large grey maculae are all 3 surrounded with black. Hindwing grey. Arizona.
- minuta.* **V. minuta** *B. & McD.* (31 i) is likewise green in the basal area, in the central area greyish-white, behind it on the greyish-white ground irrorated with green, with black transverse lines, small maculae surrounded by black, and a black subapical spot at the costal margin; the undulate line is an irregular dark shadow. Hindwing smoke-coloured grey. Described from Texas.

9. Genus: **Speocropia** *Hmps.*

Proboscis developed; the palpi exhibit a long terminal joint, the frons a small conical projection with a wall-like raised margin and a horny plate below it. The thorax is clad with scales, in front and behind it exhibits loose tufts, like the first abdominal rings do. Tibiae long-haired. A small number of tropical species, all from America, being particularly distributed in the West Indies.

- scriptura.* **S. scriptura** *Wkr.* (= *transversalis* *Wkr.*) (31 k). Forewing light reddish-brown, strewn with a darker colour, with double crenulate transverse lines, united by a black stripe on the submedian fold; the light maculae are surrounded with black; veins of the marginal area dark, between them with 3 black internerval streaks cutting the light undulate line. Hindwing red-brown. Haïti; Dominica.

S. trichroma *H.-Schäff.* (31 k) is much smaller, lighter, more greenish grey, strewn and in some places *trichroma*. irrorated with brown, in the hindmarginal part of the central area often almost white, with double transverse lines and lighter maculae which are not surrounded by dark; of the internerval streaks in the marginal area of the preceding species there is only one present on the submedian fold. Hindwing greyish-brown, towards the base whitish. Bahamas, Cuba.

S. aenyra *Drc.* (= *sabrella* *Schs.*) (31 k). Forewing dark red-brown, strewn with black, with black *aenyra*. transverse lines, the anterior line indistinctly, the posterior line partly double, and with black irroration between both along the submedian fold; the maculae are hardly surrounded with dark, instead of the undulate line there are small ochreous-yellowish spots proximally bordered by black. Hindwing red-brown. Mexico, Panama to Brazil.

S. leucosticta *Hmps.* (31 k) is similar, but of a more reddish tint with purple red striped veins, and *leucosticta*. discernible by yellowish-white dots in the macular bordering, also behind the distal transverse line. Venezuela.

S. randa *Schs.* (31 k). Forewing red-brown, strewn with yellowish-white, with black undulate transverse *randa*. lines edged with ochreous-yellow, and a blackish-brown spot between both behind and below the coniform macula, the upper maculae are bordered by white dots; the yellowish-white undulate line is on both sides bordered with brown. Hindwing yellowish-white with a red-brown marginal band and postmedian line before it. Trinidad.

S. chromatica *Hmps.* (32 a) is smaller and darker, reddish greyish-brown, strewn with black, in the *chromatica*. middle of the central area irrorated with blackish-brown; the double transverse lines are filled up with reddish, the maculae are small, in pinkish-reddish rings, instead of the undulate line there are small reddish lunae with small black sagittae before them. Hindwing white with a greyish-brown marginal band, in the ♀ yellowish-grey, broadly margined with brown. Venezuela, Paraguay.

S. nigrofasciata *Zerny* (33 k) is easily discernible by the broad blackish-brown central area of the *nigrofasciata*. forewing which is otherwise brown mixed with ochreous and strewn with bluish-white; the strongly undulate double transverse lines are filled up with ochreous; only the brownish indistinctly defined reniform macula is visible, the undulate line consists of ochreous roundish small spots distally bordered with dark brown. Hindwing diaphanous white, with a broad blackish-brown marginal band. Bolivia (Rio Songo).

S. eugrapha *Hmps.* (31 k) is much smaller with entirely white hindwings. The ground-colour of the *eugrapha*. forewing is ochreous-yellow, irrorated with red-brown, the veins are irrorated with purple, with threefold dentate transverse lines and brown-ringed maculae; behind the rather indistinct, proximally black-spotted undulate line there is a double row of dark dots. Brazil to Paraguay.

S. grandimacula *Schs.* is allied to *aenyra* (31 k), brown, strewn with black, with grey veins and velvety- *grandimacula*. black fine transverse lines, the posterior line being distally bordered with light brown, submedianly with white; the hindmarginal half of the central area is deep velvety blackish-brown, two similar spots are in the marginal area, the upper one being much smaller; on the margin there are white vein-dots. Hindwing brown. Costa Rica.

10. Genus: **Cropia** *Wkr.*

Palpi still longer than in the preceding genus and thickened at the ends, often almost knob-shaped; frons smooth, without projection. Of the abdominal tufts those at the base and in the centre are the largest and often exhibit a very strong and dense development. Of the numerous tropical American species one goes as far as the United States.

Sect. I. ♂ antennae with rather long pectinations, at the apices serrate.

C. subapicalis *Wkr.* (32 a). Forewing reddish-brown, strewn with black and white, with double *subapicalis*. transverse lines, the posterior line filled up with whitish, the maculae surrounded with black, with single white dots around them; in the postmedian area below the costal margin a white spot, distally traversed by an undulate brown line; before the white undulate line at the anal angle and behind the cell black spots, the upper one continued also behind it. Hindwing reddish-brown. From Hayti.

C. ruthaea *Dyar* (32 a) looks like *connecta* (32 c), but it is smaller, with broader wings and longer *ruthaea*. pectinate antennae. Forewing dark brown, in the basal area and subterminally lighter ochreous, the interior black transverse line deposited below the costal margin, submedianly and on the hindmarginal vein distally angled, from the upper angle a black streak to the double postmedian line; the large maculae are surrounded by black and with concentric rings; in the marginal area there are black streaks which partly cut the yellowish undulate line. Hindwing dark brown. Mexico.

C. maudaea *Dyar* (32 a) is extremely similar to *ruthaea*, the antennal pectinations are somewhat *maudaea*. shorter; the ground-colour is darker, more faded, without the basal and subterminal lighter parts; the marginal streaks are shorter and more indistinct, the hindwing is more monotonously dark. Expanse of wings: 33 mm. Mexico (Zacualpan).

Sect. II. ♂ antennae with shorter lamel-shaped pectinations.

C. europs *Dyar* (32 a) is a very large species very dissimilar to the others. Forewing dark brown, *europs*. suffused with dark blue in the basal area, submedianly and behind the cell; transverse lines double, maculae

surrounded by black, subterminally in the centre lighter yellowish-brown with black sagittae therein. Hindwing dark brown. Mexico.

indigna. **C. indigna** Wkr. (32 a). Forewing brownish-red, strewn with coarse black scales, in the central area darkened with purple blackish, with black transverse lines, the posterior line distally bordered with whitish; the maculae in light rings and surrounded by black, the reniform macula above and outside with white dots; the yellowish undulate line is on both sides shaded with brown. Hindwing yellowish-brown with a darker central luna and transverse line. Cuba, Hayti.

Sect. III. ♂ antennae with short pectinations, apically serrate.

cedica. **C. cedica** Cr. (= rivulosa Mschlr., minthe Drc. part) (32 b) is a larger, well-known species, red-brown, strewn with a darker colour, with a white basal spot and white antemedian band with a black spot below therein; the double transverse lines are filled up with white, the veins in the lower half of the central area white, the maculae in ochreous rings; the postmedian area is irrorated with white, therein black spots. Hindwing red-brown with a white anal spot and small white marginal spots. Guatemala to Brazil.

phila. **C. phila** Drc. (32 b) is somewhat similar, but the broad white bands are absent except a fine bluish-white double line with a white spot below the cell; undulate line dentate, light bluish white and reddish; the other markings agree with those of *cedica*. Panama to the Amazons.

philosophia. **C. philosophia** Schs. approximates *phila*, but it is much larger and with quite brown hindwings; the central area below the cell is very much darkened, the maculae are surrounded by violettish-white. Described from Costa Rica.

plumbicincta. **C. plumbicincta** Hmps. (32 b). Forewing greyish-brown, the lower half of the central area is jet-black, irrorated with lead-coloured grey, the transverse lines being double at the costal margin, otherwise single and bordered with bluish-white, on the averted sides irrorated with bluish-grey; the maculae are indistinctly surrounded by white and dotted black; undulate line indistinctly whitish, distally with small blackish spots. Hindwing greyish-brown, before the margin lighter. Paraguay.

submarginalis. **C. submarginalis** Schs. is on the forewing blackish-grey with velvety black veins; the black transverse lines, the posterior of which is distally irrorated with whitish, are connected by a black arcuate line, the convexity of which touches the cell; the large maculae are dull grey, strewn with white, the ring-macula is partly bordered with white; the ochreous-brown undulate line is traversed by 2 black sagittae. Hindwing dark brown with a darker, distally white postmedian line, and a white and black anal spot. Costa Rica.

viridimicans. **C. viridimicans** Drc. (32 b) is very different from all the other species by the silvery green scaling round the transverse lines and in the marginal area, the forewing is otherwise red-brown; the very large reniform macula is white, in the centre somewhat reddish-brown. Hindwing copper-red with a small black anal spot. Ecuador.

hadenoides. **C. hadenoides** Wkr. (= juba Drc.) (32 b) is very similar to *isidora*, but much smaller and with different antennae. Forewing brown, basally and subterminally irrorated with lilac-leadcoloured grey, with black submedianly connected transverse lines and very large maculae finely surrounded by black and strewn with reddish, ochreous, and white; posterior transverse line double; the pinkish-reddish undulate line is on both sides bordered with brown and is traversed by 2 black streaks. Hindwing yellowish red-brown. Panama to Colombia.

carnitincta. **C. carnitincta** Hmps. (32 b). Forewing on the pink ground strewn with brown; anterior transverse line double, posterior line only at the costal margin, below it distally bordered with pink; the coniform macula is below bordered with black, the upper, somewhat lighter-ringed maculae are not surrounded by a darker colour, between them a faded black median line; the reddish undulate line is proximally shaded with brown and traversed by black streaks, before it at the costal margin a dark brown spot. Hindwing red-brown. Panama.

impressionata. **C. impressionata** Dyar entirely resembles *aleuca* (32 c), but is separated by longer combed antennae. Forewing blackish-brown, basally and subterminally lighter reddish with black submedianly connected transverse lines and large maculae, the reniform macula with a lead-coloured ring; behind the distal transverse line submedian white irroration. Marginal area blackish. Hindwing brown. Mexico (Zacualpan).

aleuca. **C. aleuca** Hmps. (= juba Drc. part.) (32 c). Like the preceding, but with much shorter antennal pectinations. Veins and lower half of central area bead-coloured irrorated with blackish-brown, with a white basal dot. Costa Rica.

connecta. **C. connecta** Sm. (= striata Drc.) (32 c). Forewing brown, in the central area darkened, particularly towards the hind-margin with double transverse lines which are connected by a prolongation of the coniform macula; the maculae are light, the reniform macula in a whitish ring, from its lower end a black ray extends to the margin, postmedian area irrorated with whitish. Hindwing dark brownish-grey. From Texas to Paraguay.

poliomera. **C. poliomera** Jones (32 d) is very similar to *connecta*, with a strong black median line between the maculae, a much lighter, white, indistinctly defined reniform macula, and a large dark spot before the undulate line at the costal margin, in the marginal area strewn with white, in the basal half of the forewing slightly suffused with silvery grey; both the transverse lines are more distinctly double, filled up with whitish. Hindwing red-brown, with a whitish postmedian line and a white anal spot. Brazil.

C. fuscoviridis Dgn. Forewing grey, strewn with brownish, in the median area which ends taperingly *fuscoviridis* towards the hind-margin light ash-grey, before and behind it sealed light green, in the marginal area brown with black transverse lines, the anterior line with 3 distally turned bows, the posterior line interrupted and less distinct, between them a broader black line of the median area. Hindwing chestnut-brown, at the proximal angle with a lighter small spot being above and below bordered by a darker colour. Expanse of wings: 25 to 29 mm. British Guiana.

C. infusa Wkr. (= bowreyi Btlr., jamaicensis Mschlr.) (32 d). Forewing red-brown, strewn with *infusa* black, with double black transverse lines, the posterior of which is filled up with whitish, and with yellowish-ringed maculae surrounded by white dots; behind the postmedian line at the costal margin a white crescentiform spot; before the light-spotted undulate line there lie minute black sagittae. Hindwing red-brown. The ♀ lacks the white crescentiform spot, the inner half of the median area is suffused with black, the transverse lines bordered on the averted sides with white or yellowish. Jamaica; Sta. Lueia.

C. minthe Drc. (32 e) is very easily recognized by an extremely intense brass lustre on the under *minthe* surface and is otherwise very much like it; the anterior transverse line is only double at the costal margin, otherwise single, the maculae are in brown rings; the postmedian area is more or less intensely irrorated with white, sometimes not at all. Mexico, Panama.

Sect. IV. ♂ antennae very finely serrate.

C. perfusa Dyar is allied to *infusa* (32 d), but it is to be separated by the antennae; it is besides larger *perfusa*, and has an entirely black median area which covers all the macular markings except a narrow light small crescentiform spot instead of the reniform macula. Hindwing brown. Mexico (Jalapa).

C. templada Schs. (32 e) has grey forewings variably and coarsely strewn with black, with double *templada* transverse lines filled up with white, the macular bordering white and black-dotted; before and behind the undulate line black strigiform spots. Hindwing deep red-brown. Mexico, Guatemala.

C. consonens Dyar (= hadenoides Wkr. 1858 nee 1857) (32 d) is very closely allied to *templada*, but *consonens* larger, without the whitish subapical shadow and with a large blackish-brown spot in the lower third of the median area. Venezuela. French Guiana.

Sect. V. ♂ antennae plain.

C. leucodonta Hmps. Forewing red-brown, mixed with grey, the anterior transverse line black bordered *leucodonta* with a lighter colour, the posterior line double, filled up with greyish-white and distally bordered with white, on the median proximally produced; the undulate line is whitish. Hindwing coppery red-brown. Colombia.

C. isidora Dyar (32 d) also has plain antennae and otherwise entirely resembles *hadenoides*, but it *isidora* is much larger. Forewing lilac-brown, with clear and distinct markings, with black, submedianly connected transverse lines, and from this connecting streak a vertical one goes upwards to the ring-macula which is olive-yellowish like the reniform macula and strewn with white; undulate line partly composed of roundish ochreous-whitish spots. Hindwing brown. Mexico (Orizaba).

C. albielava sp. n. (32 e) is a smaller species, forewing dark purple brown with deep blackish brown *albielava* markings, the median area near the hind-margin more darkened, with double transverse lines, the interior part of the distal line more intensely black, finely crenulate; the maculae of the purple-reddish ground-colour darker centred; before the reniform macula in the cell a small brownish-black luna; the reniform macula is only below and at the apex thickly surrounded with black, and from it a faded nebulous stripe extends to the postmedian line; subterminal area somewhat lighter, small dark sagittae indicate the irregularly notched undulate line before the darkened marginal area. Hindwing dark blackish-brown with a slight coppery reflection, in the lower half of the cell and below it with a club-shaped, thinly scaled white longitudinal patch and with a dark median spot above it in the brown ground. Mexico (Orizaba), type in the Coll. DRAUDT.

11. Genus: **Heterochroma** Gn.

Distinguished by the shorter last palpal joint and the thorax being covered with not so smooth but rougher scales. The genus is purely American.

H. chloegrapha Hmps. (32 d). Forewing brownish-red mixed with ochreous, in the lead-coloured *chloegrapha* marginal area with black veins and internerval streaks, a green basal spot in the cell; anterior transverse line double, posterior line single, distally bordered with ochreous, and to it extends a red-brown stripe as a prolongation of the reniform macula; outside on the reniform macula somewhat green, also below the costal margin in the postmedian area. Hindwing white, at the distal margin apically darkened with brown. — In the form **substriata** *substriata* Strd. (= ab. 1 Hmps.) the black marginal streaks are extinct. Peru.

- phytolacca*. **H. phytolacca** *Sepp* (= *singularis* *Btlr.*) (32 d). Forewing purple dark brown with finely lighter striped veins, and fine double brown transverse lines filled up with ochreous; instead of the coniform macula a dark spot, the upper maculae in light rings, the reniform macula distally with a yellowish line; undulate line yellowish, before it small black sagittae. Hindwing yellowish-white with a broad brown marginal band. Guiana, Brazil. — The green larva with darker green subdorsal lines and lateral lines lives on *Phytolacca octandra* and is transformed into a green pupa with a brown ventral side.
- thermographa*. **H. thermographa** *Hmps.* is similar to the preceding, not so variably scaled, but more clearly and smoothly, with more distinct light transverse lines, the hindmarginal vein in the median area and the veins in the postmedian area fine white. Hindwings darker. From West Colombia.
- bellona*. **H. bellona** *Fldr.* (= *metallica* *Edw.*, *singularis* *Drc.*) (32 c). Forewing purple brown, in some places darkened by black, particularly submedianly in the central area, transverse lines double, only the posterior line bordered with a somewhat lighter reddish, with somewhat greyer maculae being surrounded by black, the reniform macula distally bordered with yellowish-white; the dentate undulate line is purple grey, proximally with small black sagittae. Hindwing yellowish-white with a broad dark brown marginal band. Mexico to Guiana.
- postalbida*. **H. postalbida** *Dyu* is easily recognized by entirely white hindwings, the veins being darkened towards the margin. Forewing brown mixed with blackish, with 3 large coherent maculae surrounded by black, the two upper ones partly centred with yellowish-white, and with quite extinct transverse lines which are submedianly connected; the light undulate line is traversed by black internerval streaks. Dominica.
- thermida*. **H. thermida** *Hmps.* (32 e) is larger than the similar *bellona*, in the central area more intensely darkened with black, the double transverse lines filled up with reddish-yellow; in the surroundings of the maculae which are encircled with black there are single white dots, on the outside of the reniform macula a large white spot; before the reddish undulate line with small black sagittae. Hindwing reddish-yellow, at the margin broadly red-brown, in the ♀ darker. Peru.
- albipuncta*. **H. albipuncta** *Jones* (32 e) is also very similar, at the base of the hind-margin with a silvery bluish-white spot on the black ground; in the central area a black streak extends from a black hindmarginal stripe upwards between the coniform macula and a black spot behind the latter; the elliptic reniform macula shows proximally a reddish spot, distally a white one. Hindwing as in the preceding. Brazil.
- insignis*. **H. insignis** *Wkr.* (32 e) likewise greatly resembles *thermida*, distinguished by the small reniform macula being centred with brown and surrounded by yellowish, not spotted white, and by the transverse lines not being filled up with a lighter colour. Jamaica.
- amphion*. **H. amphion** *Drc.* Forewing dark brown, irrorated with purple grey, the veins irrorated with grey, near the base of the hind-margin with a green spot, with double transverse lines and grey filling, the posterior line finely dentate, between them with grey maculae, the reniform macula distally bordered with white, behind it the postmedian area is somewhat lighter grey; before the grey undulate line there are small black sagittae. Hindwing reddish dark brown. Guatemala.
- sarepta*. **H. sarepta** *Drc.* (= *amphion* *Drc.* part.) (32 e) differs from *amphion* in its not dentate posterior transverse line being filled up with white, the veins before it being somewhat white-striped; the undulate line is whitish only in its uppermost oblique part, the other part being composed of small dark spots. Hindwing dark brown. Mexico to Panama.
- hypatia*. **H. hypatia** *Drc.* (32 e) is very different. Forewing silvery white, irrorated with olive-brown and in some places with red-brown, at the base of the costal margin black, behind it tinted white and pink, a similar spot at the hind-margin; the anterior transverse lines partly double, several times interrupted; before the reniform macula there is a U-shaped black spot, the macula itself and the area behind it are suffused with pink; before the double posterior transverse line at the hind-margin there is a crescentiform red-brown spot marked with pink, behind it an X-shaped black marking; the white undulate line approaches in the middle the postmedian line. Hindwing brownish-grey. Panama.
- eripioides*. **H. eripioides** *Gn.* (= *subapicalis* *Wkr.*, *porphyra* *Drc.*) (32 f). Forewing red-brown, strewn with a darker shade, with double transverse lines filled up with ochreous yellowish, the posterior line subapically interrupted by a yellowish-white diffuse spot, and the maculae surrounded with black, the reniform macula above distally spotted yellowish-white; at the hind-margin in the central area a ferruginous-reddish longitudinal spot; the undulate line consists of small yellowish spots. Hindwing reddish-brown. Guatemala to Brazil.
- hadenoides*. **H. hadenoides** *Gn.* (32 f) has red-brown forewings strewn with black, with a green longitudinal patch behind the base of the hind-margin, with black dentate transverse lines and a black longitudinal patch on the submedian fold in the anterior half of the central area; outside at the reniform macula there are 2 green dots; instead of the undulate line small black sagittae. Hindwing ochreous-brown with a darker marginal area. Brazil.
- luma*. **H. luma** *Drc.* (32 f) is larger than the preceding, without the green hindmarginal spot and without green at the reniform macula; transverse lines double, the posterior line only at the costal margin, below it distally bordered with ochreous-yellow, the maculae scarcely lighter than the ground; before the small light

spots of the undulate line there are proximally dark sagittae. Hindwing red-brown with a darker median line. Guatemala to Brazil.

H. chlorographa *Hmps.* (32 f) has reddish-brown forewings, in the antemedian area and in the distal half of the median area irrorated with purple pink and violettish-grey, with double transverse lines filled up with emerald-green, and the maculae being in green rings and below contiguous; between them the cellular ground is blackened; the undulate line is likewise green, proximally edged with blackish. Hindwing red-brown. Ecuador.

H. thermeola *Hmps.* Forewing bright red-brown, strewn with black, with double subbasal and anterior transverse lines filled up with green, the posterior line filled up with pink; the green-ringed maculae are black and redbrown-centred, the reniform macula is situate in a black spot and inwardly produced on the median; in the postmedian area there are 3 large black spots, between them 3 red-brown, pointed sagittary spots before the whitish undulate line. Hindwing coppery brown. Expanse of wings: 46 mm. Western Colombia.

H. beryllus *Gn.* (= *viridis* *Edw.*) (32 f) has green, black-strewn forewings, in the disc irrorated with red-brown, the veins strewn with white, with black transverse lines being double at the costal margin, and large brown maculae in white rings, the coniform macula traversed by green; the yellowish-white undulate line is rather broad, proximally with small black sagittae, interrupted by the faded red-brown upper and lower radial branches and the upper median branch. Hindwing yellowish, at the distal margin broadly red-brown. Mexico to Brazil and Peru.

H. lineata *Drc.* (32 g) is a common, widely distributed insect, and very similar to *beryllus*, at once discernible by the narrower but more distinctly defined yellowish-white undulate line which is pointedly crossed by the 3 fine black veins being on both sides distinctly edged with red-brown; all the markings are clearer, more precisely marked, the green colour recedes more. Mexico to Peru.

H. exundata *Schs.* (= *panama* *Strd.*, ab. 1. *Hmps.*) (32 g). Forewing brown, a spot below the base of the cell, the ring-macula and a spot below it, as well as large subterminal spots blackish-brown, the transverse lines bordered with green, the costal margin being spotted green; the maculae and a spot below the ring-macula are surrounded by whitish; the undulately dentated subterminal line separates the species at once from the similar *beryllus*. Costa Rica, Panama.

H. celestina *Schs.* Forewing in the basal third lavender-grey, crossed by a green line and distally bordered with cinnamon-brown; anterior transverse line black, on both sides broadly shaded with green, median area light brown with green-ringed small macular spots; the posterior transverse line is bordered with grey, the veins before it are likewise grey; in the brown marginal area there is the bright green undulate line. Hindwing greyish-brown. Guatemala.

H. rollia *Schs.* Forewing green mixed with purple brown, in the cell brown, in the median area below it darker brown; the ring-macula is a small green spot, the reniform macula is formed by 2 green lines in a blackish-brown spot, distally shaded with lilac, with a dark discal streak therein, below it a lilac diffuse spot not reaching the distal margin, below it the wing is blackish-brown, traversed by green lines; undulate line white, proximally shaded with brown, interrupted on the middle radial branch, below it fadedly cinnamon-brown. Hindwing greenish-white, distally brown with an undulate postmedian line. Peru.

H. viridipicta *Schs.* has blackish-brown forewings, finely reddish at the costal margin and hind-margin, with black transverse lines broadly edged with green; instead of the coniform macula a white spot, behind it a dark spot on both sides bordered with green. Reniform macula reddish-brown, crossed by 2 green lines, in the postmedian area the two median branches and the median radial branch are pinkish-brown as far as the white undulate line which is spotted pinkish-brown on the veins; marginal area green, traversed by lilac-brown veins. Hindwing greyish-brown, tinted pink with pink fringes. Costa Rica.

H. berylloides *Hmps.* (32 g) is one of the largest species, the most similar to *beryllus* (32 f), separated by the non-coherent undulate line which is composed of single, short whitish streaks, forewing extensively bright moss-green with red-brown spots, single transverse lines on both sides bordered with green, with brown and black-centred maculae in green rings; submedianly at the undulate line a large white spot. Hindwing red-brown. Jamaica.

12. Genus: **Atrephes** *Hmps.*

Very closely allied to *Speocropia* (p. 218) and distinguished by the stunted proboscis and more thickly scaled second palpal joint as well as the parted tuft on the prothorax; of the series of abdominal tufts that on the 3rd ring is the largest. Only 2 tropical American species are known so far.

A. albiluna *Hmps.* (32 g). Forewing brownish purple grey, strewn with white, with greenish veins and black transverse lines, the maculae feebly surrounded with whitish, with a white crescentiform streak outside at the reniform macula; before and behind the greyish-white undulate line with small black sagittae. Hindwing brownish-grey. ♂ antennae pectinate. Brazil.

phoece. **A. phoece** Jones (32 g). Forewing lustrous light red-brown mixed with grey, with indistinct transverse lines being on the averted sides bordered with grey and white, the grey maculae surrounded with brown; undulate line composed of whitish striae anteriorly bordered with black. Hindwing yellowish-white, at the distal margin red-brown. ♂ antennae serrate. Brazil.

13. Genus: **Eucropia** Hmps.

Likewise very closely allied to *Speocropia* and separated from it by the stunted proboscis and a different frontal appendage representing a rounded projection with an oblong keel. Only 1 species:

pallirena. **E. pallirena** Fldr. (32 h). Forewing red-brown, as far as the reniform macula and below it as far as the posterior transverse line suffused with blackish-brown (except the hind-margin), continued in a patch from the lower cell-end to the distal margin, with plain, finely erenulate transverse lines and large maculae encircled by black and white, with ochre-yellowish lunulae outside at the reniform macula; the undulate subterminal line is ochre-yellowish with a black spot before it below the costal margin, below it with small black sagittae, and on the submedian fold with a long black ray. Hindwing yellowish-white with a red-brown marginal band. Venezuela.

14. Genus: **Perigea** Gn.

This genus contains an immense number of species with representatives in the northern and southern parts of America, although their number and variability is much greater in South America. Proboscis developed, frons smooth, thorax covered with scales, in front with a loose tuft, behind with a very small one; the abdomen exhibits small tufts on the first rings. — The genus occurs in all parts of the world except Europe. As to the palearctic species cf. Vol. III, p. 220, as to the Indian species cf. Vol. XI, p. 123.

leucoptya. **P. leucoptya** Dogn. (32 h). Forewing bright red-brown with darker brown veins, with a short white basal ray and 2 white dots obliquely above it, with rather indistinct transverse lines and white maculae surrounded by brown, the reniform macula above with 4 white dots; the whitish undulate line is proximally bordered with brown. Hindwing white. Colombia, Peru.

apameoides. **P. apameoides** Gn. (= *plagiata* Wkr., *inclinata* Wkr., *subaureata* Wkr., *subaurea* Drc.) (32 h) is an extremely common and wide-spread species, the range of which extends from North America to Paraguay and Argentina. Forewing on the yellow ground irrorated with red-brown and greyish brown, with double transverse lines and black and white vein-dots behind the distal line; maculae in yellow rings with a white spot below in the reniform macula and a dark brown shaded undulate line. Hindwing yellowish-white, veins and margin brownish. — In the form **mobilis** Wkr. the white spot in the reniform macula is absent. — *iole* Grt. (= *icole* Grt.) is more red-brown, the yellow ground-colour receding very much.

subaurea. **P. subaurea** Gn. (32 h) is much larger, duller red-brown, with the same markings, but with much brighter yellow and more distinctly pronounced spots in the marginal area behind the undulate line. Hindwing dark red-brown. Brazil.

imitata. **P. imitata** Drc. (32 h) together with the following two similar species forms a group distinguished by peculiarly shaped palpi and antennae; the palpi are long and at the ends tuftedly haired, the antennae at the bases curved. Forewing whitish-grey with large red-brown spots, in the ♀ more intensely suffused with brown; forelegs with tufts of hair at the ends of the tibiae. Mexico, Panama, Venezuela, Brazil.

mimica. **P. mimica** Hmps. (32 h) is very similar to *imitata*, with somewhat shorter palpi, the forelegs without the tufts of hair; forewing marked and coloured almost the same, the differences being sufficiently exhibited in the figures. Mexico to Paraguay.

simulatrix. **P. simulatrix** Hmps. is likewise extremely similar to *imitata*, with still shorter palpi, but a normal basal joint which is thickened and long-haired in the two preceding species, the antennae not curved, and with normal forelegs. Only known from Venezuela.

cupentia. **P. cupentia** Cr. (= *epopea* Cr., *palpalis* Wkr.) (32 i) is also very much like the preceding, but with normal palpi and antennae. Forewing greyish-white, in the ♀ more bluish-grey with quite similar red-brown spots, and in some places irrorated with blackish. — **confederata** Grt. is the North American form with a black reniform macula, a coherent anterior transverse line, the maculae surrounded by blackish, and with more intense blackish irroration before the undulate line. — **infelix** Gn., from Florida, is more intensely irrorated with red-brown, so that the grey colour is only feebly prominent as irroration in the hindmarginal area, with a lighter subapical spot and indistinct marking. From the United States to Paraguay, everywhere very common.

thyatiroides. **P. thyatiroides** B. & Benj. exhibits a very uncommon exterior with a variable ground-colour being ochreous, brown, or dark olive, in the disc with dark striations, the black basal transverse line submedianly

connected by a black spot with the anterior transverse line which is distally bordered with white, in the centre with violettish-white, with large maculae encircled with violettish-white, the reniform macula being black centred with a lunar spot of the ground-colour; behind the distal transverse line 3 black spots; undulate line violettish-white. Hindwing of a silky lustrous brownish-grey colour. From Arizona. — The entirely dark olive form is denominated: *habrosynoides* B. & Benj.

habrosynoi-
des.
griseirena.

P. griseirena *Hmps.* (32 i). Forewing bright red-brown, strewn with bluish-grey, with bluish-grey dentate transverse lines being white at the costal margin, and bluish-grey maculae; the undulate line also consists of bluish-grey small lunae inside spotted dark. Hindwing greyish brown. South East Peru.

P. poliopasta *Hmps.* (32 i). Forewing greyish-white, strewn with brown, in the anterior costal half red-brown, downwards defined by a black basal ray, and with a red-brown marginal spot below the apex; anterior transverse line double, posterior line very faint, the grey maculae bordered with white. Hindwing reddish-brown. Guiana, Bolivia, Trinidad.

poliopasta.

P. glaucoptera *Gn.* (32 i) is similar to *poliopasta*, larger, with a small red-brown basal spot leaving free the whole basal area, and with large maculae surrounded by blackish, without a basal ray, the posterior transverse line double; in the red-brown marginal spot the veins are black-striped. Hindwing white, veins and margin brownish, in the ♀ darker. Mexico to Brazil.

glaucoptera.

P. eguigureni *Dgn.* is more yellowish-white, in, below and behind the cell-end irrorated with brownish-red, and with a brownish-red marginal spot leaving free the apex, with double brown transverse lines, and black and white vein-dots behind the distal line; the ring-macula is a small whitish spot, the reniform macula is strangulated with a red-brown median streak; the deep red-brown undulate line is faded. Hindwing yellowish-white, with reddish-brown veins and margin. Ecuador.

eguigureni.

P. leucostrota *Hmps.* (32 i) is very similar to *glaucoptera*, smaller, also in the basal area more or less intensely irrorated with red-brown; above the brown terminal spot a distinctly prominent oblique, whitish, subapical patch. Hindwing much darker. Peru.

leucostrota.

P. hippia *Drc.* (33 a) is likewise similar to the preceding, larger, stronger, white, in the basal half as far as below the cell red-brown, and in the whole postmedian area except the apex red-brown with dark brown veins; the ring-macula in a white oblique band, the reniform macula centred brownish and below proximally produced with a small brown spot; behind the postmedian line a double row of brown dots; undulate line yellowish, rather indistinct. Hindwing blackish-brown. Mexico, Panama.

hippia.

P. micrippia *Dyar* is much smaller, silvery grey with a red-brown costal-marginal spot in the basal quarter, an oblong oblique one between the maculae; also the subterminal area is red-brown below an oblique apical streak, the marginal area somewhat less dense, both colours separated by the yellowish undulate line. Hindwing of a dingy whitish colour, at the margin brownish. Mexico.

micrippia.

P. kalma *Schs.* (= *iaspis* *Drc.*) (32 i). Forewing ochre-brownish, strewn with blackish, in the basal half of the costal margin, the proximal half of the discal area and an oblique apical shadow irrorated with brown; maculae and distal half of the costal margin white; with black and white striped veins, double transverse lines filled up with yellowish-white, and with a black streak between the maculae; undulate line dark. Hindwing yellowish, at the margin brownish. Mexico to Panama.

kalma.

P. paragalla *Dgn.* Forewing lilac-brown, basally mixed with lustrous whitish, with 2 black spots therein with brownish-black transverse lines bordered with whitish, the maculae surrounded with whitish, with black and white vein-dots in the postmedian area; in the marginal area there is subapically a black spot. Hindwing blackish with light violet fringes. Expanse of wings: 34 to 39 mm. Colombia (Quindiu).

paragalla.

P. discincta *Btlr.* (33 a) is an easily discernible, smaller, light reddish-brown species, in the marginal area except the whitish apex darker red-brown, defined by the almost straight yellowish-white, proximally red-brown postmedian line; the maculae surrounded with whitish, the ring-macula connected with a two-pointed spot below it. Hindwing reddish-brown. Brazil.

discincta.

P. confluens *Hmps.* (33 a). Forewing dark red-brown, intensely irrorated and strewn with black, with rather indistinct, at the costal margin white transverse lines, and white, below confluent maculae, with white dots round the reniform macula; behind the undulate line which is composed of small black sagittae there are 3 white dots in the marginal area. Hindwing white, at the margin brown. Bahamas.

confluens.

P. funerea *Schs.* Forewing violettish-black with a reddish hind-margin, with indistinct, interrupted, reddish yellow transverse lines which begin somewhat thicker at the costal margin; the reddish maculae are connected by a black streak, the reniform macula is spotted and dotted white; instead of the undulate line velvety black internerval streaks. Hindwing greyish-brown. Costa Rica.

funerea.

P. subornata *Wkr.* (= *niveopicta* *Btlr.*, *hypocritica* *Dyar*) (33 a). Forewing red-brown, irrorated with grey and strewn with black, with numerous small white spots, also the yellowish white maculae bordered with numerous white dots. Hindwing yellowish white, veins and margin brownish, in the ♀ darker. From Mexico to Paraguay.

subornata.

- stelligera*. **P. stelligera** Gn. (33 a) is very similar to the preceding, much larger, of a more brownish-grey ground-colour, strewn with more numerous and finer small white spots, and with quite dark hindwings. Mexico to Brazil. — The Mexican form: **pagetolophus** Dyar exhibits the thoracal and abdominal tufts more mixed with white.
- purpurea*. **P. purpurea** Drc. (33 a) has purple red-brown forewings strewn with black and white, with double black transverse lines, the maculae surrounded with white dots, the reniform macula also centrally white; the undulate line consists of white small spots on both sides striped black. The light greyish-brown hindwing is tinted purple red at the margin. Peru.
- abida*. **P. abida** Fldr. Forewing light red-brown, irrorated and strewn with a darker colour, with dentate, partly double transverse lines filled up with yellowish-white, the ring-macula in a white ring, the reniform macula surrounded with white dots, and with a comma-like spot; in the undulate line there are small white faded spots. Hindwing light brown, at the margin darker. Venezuela, Brazil, Trinidad.
- albolabes*. **P. albolabes** Grt. (33 b) has dark red-brown forewings with blackish striped veins scantily strewn with white scales and indistinct double transverse lines in some places filled up with whitish spots; the ring-macula is quite indistinct, the reniform macula is a white comma-shaped spot, surrounded with white and black dots; the undulate line is composed of small whitish lunae being on both sides spotted black. Hindwing light brown, at the margin darker. From Colorado, New Mexico, and Arizona to Panama.
- albigeroides*. **P. albigeroides** Dgn. (33 b) is a larger species somewhat similar to *purpurea*. Forewing red-brown; irrorated darker, with black veins, indistinctly double transverse lines, and black and white dotted maculae; before the ochreous yellowish undulate line there are small black sagittae. Hindwing light brownish with darker veins and margin. Ecuador and Peru.
- roxana*. **P. roxana** Drc. (= *lucetta* Sm.) (33 b) is on the yellowish red-brown ground suffused with purple, with rather indistinct, partly interrupted blackish transverse lines, with black and white double dots behind the distal line, with somewhat yellowish maculae surrounded with black, the reniform macula below with a white spot, and bordered with single white dots; the ochreous-yellowish undulate line is more or less interrupted, rarely quite complete. Hindwing yellowish-brown, at the base lighter. Known from Mexico.
- dentistrigata*. **P. dentistrigata** Wkr. (33 b). Forewing blackish-brown, in some places irrorated with ochreous; the anterior transverse line is indistinctly double, filled up with grey, the posterior single line is distally bordered with ochreous-yellowish, with a large coniform macula surrounded with black, the upper maculae in scarcely lighter rings, the reniform macula below white-pupilled, often divided into small spots; the undulate line consists of small yellowish-white spots with black sagittae before them. Hindwing light brownish, at the margin broadly darkened. Brazil.
- punctirena*. **P. punctirena** Wkr. (= *praececellens* Mschlr.) (33 b) has bright red-brown forewings in some places irrorated with dark, with double dentate transverse lines and 3 maculae surrounded with black, outside at the reniform macula white dots; the grey undulate line is proximally shaded with blackish-brown, with long black streaks to the postmedian line. Hindwing white, on the veins and margin reddish-brown. From Jamaica and Hayti.
- circuita*. **P. circuita** Gn. (= *decens* Wkr., *prolifera* Wkr., *punctosa* Wkr., *pupulla* Mschlr.) (33 b) resembles a small dark *roxana*, the colour being rather more coppery-red, the undulate line divided into 3 somewhat larger ochreous yellowish spots, with distinctly light speckled fringes. Mexico to Paraguay; it also occurs in the Canary Islands.
- albiger*. **P. albiger** Gn. (= *intermittens* Wkr., *berinda* Drc. part.) (33 c) with uncommonly long modified palpi like in the *imitata*-group is a small blackish-brown species, the reniform macula filled up with white, with a slightly curved ochreous-yellowish postmedian line on both sides defined with black. Hindwing yellowish-white, on the veins and margin brownish-black. Mexico to Paraguay, recently also reported from Texas.
- carcoma*. **P. carcoma** Dgn. (33 e). Forewing of a silky lustrous greyish brown, with indistinct double transverse lines, with black vein-dots behind the distal line, the maculae irrorated with whitish, the reniform macula below with 2 white dots; before the grey undulate line there is dark shading. Hindwing light brownish, in the marginal area darker. Ecuador.
- sufficiens*. **P. sufficiens** Wkr. (33 c) has lustreless, brownish grey forewings with quite indistinct, at the costal margin double transverse lines, the maculae above open, surrounded with black, below connected by a black streak, the strangulated reniform macula centred blackish, and below outside with a black dot, instead of the coniform macula with a black spot; the undulate line is composed of small black sagittae. Hindwing whitish, at the margin yellowish-brown. Hayti.
- conclisa*. **P. conclisa** Wkr. (= *consocia* Wkr., *centralis* Wkr., *imbella* Wkr., *laphygmoides* Wkr., *plumbago* H.-Schäff.) (33 c) is a small, light grey species irrorated with a darker colour, with double transverse lines filled up with yellowish, the maculae surrounded with yellowish; before the yellowish undulate line which is proximally shaded with blackish-brown there are small black sagittae. Hindwing whitish, at the margin brownish. Most widely distributed from Florida to Paraguay and Argentina.

P. menota *Dyar* (33 c) resembles the preceding so much that it is difficult to separate; it is of a *menota*, more slender structure with somewhat longer forewings with an obliquer distal margin and longer apex, duller, more lustreless and somewhat darker, with darker, in the ♀ entirely darkened hindwings. Mexico.

P. drusilla *Schs.* Forewing yellowish-white, irrorated with reddish-brown, with an entirely indistinct *drusilla*, anterior transverse line being marked by white vein-dots and only double at the costal margin, the maculae surrounded with greyish-brown; the posterior transverse line is light, proximally brown, distally marked with black and white vein-dots, in the dark purple brown marginal area behind it there are undulate linear spots. Hindwing brownish-grey. British Guiana.

P. sutor *Gn.* (= *turpis Gn.*, *indeisa Wkr.*, *claufacta Wkr.*, *otiosa Wkr.*, *paupera Wkr.*, *detrecta sutor. Wkr.*, *fabrefacta Morr.*, *cervina Sm.*) (33 e) is an extremely common and widely distributed species; lustrous greyish-brown, strewn darker, with indistinctly double darker transverse lines, the maculae encircled with black, with white dots in the reniform macula; postmedianly there are black and white vein-dots, before the light undulate line dark shading and black longitudinal streaks. Hindwing yellowish-brown, at the margin darker. From the United States to Paraguay and Argentina *).

P. sutrix *Dyar* (33 d) is very closely allied to *sutor* and chiefly separable by the much lighter hindwings; *sutrix*, the forewing is more monotonously loam-coloured yellowish-grey, less strewn with white, the maculae also less white; before the undulate line somewhat more intensely shaded with blackish. Mexico.

P. lineata *Drc.* (33 d). Forewing red-brown, strewn with white, with feebly darker, double transverse *lineata*, lines filled up with light grey, and the maculae in fine grey rings; the undulate line more or less distinctly grey, proximally shaded with dark. Hindwing light greyish-brown, at the margin darker, in the ♀ darkened. Mexico, Panama.

P. parista *Schs.* The yellow ground of the forewing is mixed with red, in the median area and post-*parista*, medianly suffused with slate-coloured grey, with slate-coloured veins which are strewn with white in the distal third; transverse lines dark red, the posterior line more shadow-like; the larger yellow reniform macula is bordered and striped with red, with a small white spot therein. Hindwing whitish, at the margin grey. Guatemala.

P. cenola *Schs.* (33 d). Forewing red-brown, from the base to the posterior transverse line except *cenola*, the costal-marginal part irrorated with dark blackish-brown, the veins striped dark; transverse lines indistinct, double, the posterior line with rows of vein-dots behind it; maculae encircled and centred with black; undulate line fadedly darker. Hindwing yellowish white, at the margin brownish. Brazil (São Paulo).

P. tetera *Wkr.* (= *sobria Wkr.*, *inquieta Wkr.*, *distans Wkr.*) (33 d) is smaller than the preceding, *tetera*, more greyish-brown, postmedianly irrorated with whitish, with brownish transverse lines being on the averted sides bordered with greyish-white, with small maculae surrounded with brown and centred with yellowish, between them a dark median shadow; the light-spotted undulate line is proximally shaded with brown. Hindwing white, at the margin brownish. The ♂ is more monotonously greyish-brown with darker hindwings. Brazil.

P. vacillans *Wkr.* (= *fidelia Drc.*) is much darker, purple red, strewn with black, in the hindmarginal *vacillans*, half somewhat more reddish-brown, with indistinctly double transverse lines, the posterior line dentate with black and white vein-dots, the maculae surrounded with black, with a white spot in the reniform macula, surrounded by white dots, between them with a faded median shadow; undulate line composed of small black sagittae. Hindwing blackish-brown with a coppery reflection. Panama to Brazil.

P. baalba *Schs.* Forewing greyish-white, basally at the costal margin and in the cell mixed with *baalba*, brown, with black transverse lines; the small reniform macula which is strewn with brown, is bordered with white; from the cell-end a brown patch extends to the margin; behind and below the cell-end there is another brown spot. Hindwing brownish-grey, with darker veins. Guatemala.

P. ruthae *Schs.* Forewing of a silky lustrous drab colour, with black transverse lines being on the *ruthae*, averted sides bordered with pinkish-yellow; the ring-macula is in a whitish ring, the reniform macula distally white, proximally reddish-yellow, between both there are black spots, behind it a streak connecting it with the spotted postmedian line; undulate line with reddish-yellow spots. Hindwing blackish-grey. Galapagos Islands.

P. ebba *Schs.* Forewing brown suffused with purple, the veins strewn with black and white, below *ebba*, and behind the cell-end blackish-grey, strewn white, with black transverse lines and white vein-dots behind the distal line, the bordering of the maculae scantily scaled white; the light undulate line is proximally shaded with blackish. Hindwing brownish-grey, at the margin darker. A smaller species from the Galapagos Islands.

P. selenosa *Gn.* (= *remissa Wkr.*, *demittens Wkr.*, *agnata Fldr.*, *luxa Grt.*, *samula Drc.*, *sutor Drc.*, *selenosa, fidelia Drc.* part.) (33 d). Forewing lustrous ochreous-brown, strewn with black, with indistinct double transverse lines filled up with ochreous, and ochreous-yellowish maculae finely surrounded with black and more or less strewn with black, with a large white spot in the reniform macula which is absent in the form **vecors** *Gn.* (33 d); *vecors*, behind the undulate line more or less distinct black marginal streaks. Hindwing brownish-grey with light fringes. An extremely common insect of an immensely vast range from the United States to Brazil, also in Jamaica.

*) *P. proxima Morr.*, described as *Perigea* from Texas, is a species not to be identified, not represented in any collection and without a type being traceable, for which reason it is best cancelled.

- orta*. **P. orta** B. & McD. is very much like *vecors* (33 e), but it is much smaller and lighter and chiefly distinguished by the reniform macula exhibiting in the lower half a quadrangular white spot, below shaded with black; the upper half contains several small olive spots separated from each other by dark shading; the total colouring is more reddish-brown mixed with olive, particularly in the filling of the transverse lines; the indistinct undulate line is only prominent by the contrast between the darker subterminal area against the more ochreous-tinted lighter marginal area. Hindwing smoky grey. Expanse of wings: 23 to 28 mm. Described from Arizona.
- consaepta*. **P. consaepta** sp. n. (33 e) is somewhat similar to *selenosa*, the ground-colour is almost purely black, quite scantily strewn with ochreous, the transverse lines broken up into single small ochreous spots, behind the distal line with white vein-dots on both sides black-striped, the beginnings of the transverse lines marked by small yellowish-white costal-marginal spots; the ring-macula is small, quadrangular, somewhat strangulated, bordered with yellowish-white, the reniform macula is an X-shaped loam-coloured yellowish marking, between the lower sides of which there is a white pear-shaped large spot; the undulate line consists of ochre-yellowish small spots anteriorly bordered with black; on the distal margin there are thick yellowish-white vein dots. behind it the fringes are broadly crossed with snow-white, behind a black basal line. Hindwing blackish-brown, towards the base lighter whitish. Mexico (Zacualpan, Cuernavaca), described according to several specimens, received from ROB. MÜLLER.
- summota*. **P. summota** Schs. Forewing dull brown, the median area and a subterminal shadow blackish-brown, with single, somewhat darker transverse lines, and a small, dark-centred reniform macula; on the distal margin white vein-dots. Hindwing white, at the distal margin blackish. This species is allied to *tetera* (33 d). From Costa Rica.
- berinda*. **P. berinda** Drc. (= *detrecta* Drc. nec Wkr.) (33 e). Forewing yellowish brown, in some places strewn with brownish black, with rather indistinct transverse lines, the anterior line double, the posterior line only feebly curved, bordered with a lighter colour, with black vein-dots behind it; the coniform macula is a black spot, the upper maculae surrounded and centred with black; before the yellowish undulate line there is black shading. Hindwing reddish-brown. Mexico to Paraguay.
- mustia*. **P. mustia** Dgn. (33 e) has ferruginous-red forewings, in some places strewn with black, with black transverse lines, the posterior line double and with black and white vein-dots behind it in a black subterminal band; the maculae are surrounded with black, the reniform macula is white-spotted; the veins in the marginal area black-striped. Hindwing greyish-brown, at the margin darker. Ecuador.
- illicita*. **P. illicita** Schs. is allied to the following *agalla* (33 f); forewing silvery grey with fine double brownish transverse lines, behind the distal line with white vein-dots; ring-macula V-shaped, bordered with white, beneath spotted velvety blackish-brown, the reniform macula distally finely bordered with white and velvety black; in the pinkish-brown marginal area there is a whitish subterminal shadow and a black subcostal spot. Hindwing brownish-grey. Costa Rica.
- agalla*. **P. agalla** Dgn. (33 f). Forewing light reddish greyish-brown with double undulate transverse lines and double dots behind the distal line; maculae small, whitish, centred with blackish-brown, the cell between them blackened, behind them continued as a dark patch to the distal margin; before the light undulate line shaded with brown. Hindwing light brownish-grey with light fringes. Ecuador and Peru.
- micragalla*. **P. micragalla** Hmps. is smaller than the preceding, the transverse lines bordered and filled up with a lighter colour, the yellowish maculae in white rings and surrounded with black, before and between them deep red-brown irroration in the cell, the undulate line is whitish, with black dots before it. Hindwing light yellowish-brown. Expanse of wings: 30 mm. North-East Peru.
- bahamica*. **P. bahamica** Hmps. (33 f) is likewise very similar to *agalla*, with more whitish wings, particularly in the costal area, with a black basal say; before the S-shaped reniform macula on the discal fold a yellow streak in the darkened ground of the cell, behind it black streaks as far as behind the postmedian line. Hindwing towards the base lighter. Bahamas.
- punctifera*. **P. punctifera** Wkr. (= *semifurca* Wkr.) (33 f). Forewing reddish-brown, strewn with dark brown, with double transverse lines and white and black vein-dots on their averted sides; coniform macula black, the upper maculae whitish and surrounded with yellowish, reniform macula below white-spotted; the whitish undulate line is proximally shaded with black. Hindwing light brownish, at the margin darkened. In the West Indian Islands; Bahamas, Jamaica, Cuba, Hayti. — In the form **obsoleta** Strd. (= ab. 1. Hmps.) the white spot of the reniform macula is absent.
- secorva*. **P. secorva** Schs. (33 f). Forewing olive-yellowish, scantily strewn with a darker colour and in the cell darkened by blackish like in the marginal area, in the hindmarginal part of the median area tinted reddish, postmedianly with black internerval streaks, with a black basal ray; transverse lines indistinctly, only at the costal margin more distinctly double, behind the distal line double vein-dots; the coniform macula is a black spot, the upper maculae are lighter, surrounded and inside marked with black, the reniform macula very much strangulated; the light undulate line is hardly visible. Hindwing greyish-brown. Brazil, Paraguay.

P. perculsa *sp. n.* (33 f) is allied to the preceding, very light loam-coloured yellowish-grey, in the *perculsa*. cell between the maculae blackish, the transverse lines broken up into rows of vein-dots, the lighter maculae scarcely defined, the reniform macula somewhat strangulated, below with 2 black dots therein, the inner one of which is larger; marginal area blackish except the obliquely cut-off apex, in it the lighter undulate line projecting in the centre towards the margin, proximally shaded with a darker colour; fringes at the ends of the veins traversed by yellowish. Hindwing very light brownish-grey, towards the base almost white. Mexico.

P. gurrha *Dyar* is apparently very closely allied to *perculsa*; the loam-coloured forewing shows a reddish *gurrha*. tinge in the disc, whilst the markings are more distinctly contrasting; the light maculae are situated in a dark cellular shadow, the reniform macula has below but one black dot, the transverse lines are composed of double rows of dots on the veins; in the darkened marginal area there is a bent, still darker subterminal shadow, the apex remaining light; on the distal margin there are black internodal dots; most easily discernible by dark blackish-brown hindwings which are only in the ♂ towards the base somewhat lighter yellowish. Expanse of wings: 32 mm. Mexico (Zacualpan, Cuernavaca).

P. rubrifusa *Drc.* (33 e). Forewing deep red, mixed with whitish, with black, dentate transverse lines *rubrifusa*. bordered with whitish, the posterior line being more or less double with black and white vein-dots behind it; maculae in whitish rings and centred with blackish; before the whitish undulate line black shading. Hindwing brown, at the margin reddish. South-Eastern Peru.

P. caustimargo *Dyar* has reddish-brown forewings, the markings being faded in the ♂, but distinct *caustimar-* in the ♀, whilst the margin and fringes are of a burnt-like brown colour; in the ♀ the transverse lines are double, *go*. the distal line with vein-dots behind it; the large, light yellowish, faded reniform macula is common to both sexes. The brownish-grey hindwing is darker in the ♂ than in the ♀. Mexico.

P. agnonia *Drc.* (32 k). Forewing ochre-yellowish, at the costal margin lighter, towards the hind- *agnonia*. margin and at the distal margin suffused with red-brown, with a black basal ray, double transverse lines and a double row of vein-dots behind the distal row, the maculae surrounded with brown, in the reniform macula below with 2 black dots; veins in the marginal area striped black behind the dark-shaded undulate line. A common insect from Mexico to Peru.

P. parastichtoides *Hmps.* (33 f) differs from the allied preceding species by the red-brown basal ray *parastich-* and veins of the marginal area, the cell between the maculae and behind them is of a deeper red-brown, the *oides*. undulate line being also inwardly shaded with a more red-brown colour. Brazil.

P. albistriata *Hmps.* is likewise extremely similar to *agnonia* (32 k), larger, irrorated with a more *albistriata*. ferruginous red colour, in the marginal area except the apex lighter, without maculae, only at the lower cell-end there is a dark spot; behind the postmedian line there are no vein-dots, and in the marginal area there are deep ferruginous-red internodal streaks on both sides edged with whitish, the discal streaks extending to the cell; no undulate line. Hindwing whitish, at the margin reddish-brownish. Peru.

P. leucanioides *Hmps.* (33 g). Forewing light yellowish, on the veins and between them striped red- *leucanioides*. brown, in the marginal area the veins are whitish, on both sides bordered with red-brown; only the posterior transverse line is marked by vein-dots with white dots behind them, the anterior line only at the costal margin; maculae and undulate line absent except a small dark spot at the lower cell-end. Hindwing yellowish-brown, at the margin coppery red. Venezuela.

P. xylophasioides *Gn.* (33 g) has ochre-reddish forewings, of a deeper reddish colour are the median *xylophasioides*. area, the upper half of the postmedian area and the margin except the apex; the median vein and the hind-marginal vein are white, the veins of the marginal area are striped dark, the hindmargin red-brown; the transverse lines are marked by double rows of vein-dots; the oblique ring-macula is in a yellowish ring, the reniform macula only below yellowish, and with black dots in the centre; from the lower cell-angle a dark discal stripe extends to the margin; behind the faded brown undulate line there are white vein-dots. Hindwing yellowish-white, the veins and margin being brown. Brazil.

P. xanthoides *Gn.* (= trita *Mschlr.*) (33 f). Forewing orange-yellow, irrorated with red-brown, *xanthoides*. particularly in the median and marginal areas, with dark-striped veins, dentate transverse lines, with a double row of vein-dots behind the distal line, and with small yellow, brown-centred maculae, with a small black spot below in the reniform macula; the undulate line is composed of small yellowish, proximally brown spots. Hindwing yellowish-brown. — **enixa** *Grt.* is a much lighter, whitish form tinted reddish-brown, with white *enixa*. hindwings exhibiting a light brown tint at the margin. The latter form is from Texas. — The type flies from Canada to Florida and Texas, and then again in Brazil, also in Cuba and Trinidad.

P. abstemia *Gn.* (32 k) is a larger species very much resembling *roxana*; forewing on its yellowish- *abstemia*. brown ground tinted with copper-reddish and strewn with blackish, with double, interrupted blackish transverse lines and vein-dots behind the distal line; the yellowish maculae are finely encircled with black and centred with brownish, the reniform macula is strangulated and below proximally spotted black, between and behind them irrorated with blackish-brown; the coniform macula is also present; the yellowish undulate line is proximally irrorated with brown. Hindwing yellowish reddish-brown. Mexico.

- perparvula*. **P. perparvula** Schs. (32 k) is a very small, golden yellow species strewn with red-brown, in the median area before and between the maculae and in the marginal area tinted brown with indistinctly double transverse lines and vein-dots, the small maculae being surrounded with black; the brown undulate line is faded. Hindwing of a pure white, in the ♀ towards the margin brownish. Brazil, Paraguay.
- pyrostigma*. **P. pyrostigma** Hmps. (33 g) is on its yellowish ground irrorated with dark brown so that the yellow ground-colour only appears in some places, with blackish transverse lines which are bordered with yellow on the averted sides, and a double row of vein-dots behind the distal line; the small round ring-macula is yellow, centred red, the reniform macula is a small yellow spot, surrounded with red and with 4 yellow dots around it and a small white spot below it; undulate line faded brown. Hindwing light brown, on the veins and margin darker. Argentina.
- pyromphalus*. **P. pyromphalus** Dyar (32 k). Forewing orange-brownish, particularly towards the costal margin darkened with copper-reddish grey, with double transverse lines broken up into copper-red vein-dots; the small round ring-macula is orange, encircled and centred with brown, the reniform macula is narrow, orange, below with a white dot which is continued in a fine line; undulate line blackish, spotted. Hindwing greyish-brown. Mexico.
- octophora*. **P. octophora** Hmps. (32 k). Forewing blackish-brown, at the costal margin mixed with red and ochreous, the proximal and marginal areas irrorated with reddish, with black rather indistinct transverse lines, with small white spots at the costal margin, the maculae being spotted white, yellow and red, the reniform macula shaped like an 8; the indistinct dark undulate line begins with a white costal-marginal streak. Hindwing greyish-brown. Peru.
- aeruginosa*. **P. aeruginosa** Schs. is a very small species; forewing yellowish, strewn with red, in the median area grey, at the costal margin lilac-grey, at the base and before the apex spotted yellow, also at the cell-end, and here there is below a short oblique white streak; transverse lines reddish, behind them the grey veins are strewn with yellow and red. Hindwing white, at the distal margin darkened with brownish-grey. Costa Rica.
- leucopis*. **P. leucopis** Hmps. (32 k). Forewing yellow mixed with fiery red, from the anterior transverse line except the costal margin and anal angle irrorated with red-brown, with blackish-brown transverse lines being spotted yellow on the averted sides, and with yellow, red-centred maculae, the 8-shaped reniform macula below spotted white; undulate line dark, faded. Hindwing red-brown, towards the base yellowish. Brazil.
- pyrosticta*. **P. pyrosticta** Drc. (33 g) is much larger than the preceding, darker red-brown, at the base, costal margin and postmedianly irrorated with orange; the reniform macula is below not white-spotted, but it has below in the bordering single fine white dots, and the undulate line is spotted yellow at the costal margin. Hindwing dark brown with light fringes. Peru.
- naolina*. **P. naolina** Schs. (32 k). The brown forewing is fiery red mixed with yellow, postmedianly and in the hindmarginal half of the median area irrorated with blackish-brown, with rather indistinct dentate transverse lines, and white maculae being centred yellow and red, the ring-macula triangular, the reniform macula strangulated and in its bordering dotted silvery white; undulate line spotted red and yellow. Hindwing brown. Brazil.
- ignitincta*. **P. ignitincta** Mssn. (33 g). Ground-colour similar to *naolina*, the yellow and red centred maculae are in silvery white rings, and at the apex of the reniform macula there is a silvery white spot outside bordered with black; undulate line dark and only at the costal margin marked somewhat with yellow. Hindwing light yellowish-brown. Ecuador; Peru.
- pyrocausta*. **P. pyrocausta** Hmps. Forewing fiery red mixed with yellow, at the margin irrorated with greyish-brown; the anterior transverse line is double, filled up with yellow, the posterior line blackish, bordered with grey; the ring-macula is a yellow crescentiform spot, above with a yellow and black dot, the reniform macula yellow, centred fiery red, in a yellow ring and surrounded by brown; the red undulate line is distally irrorated with yellow. Hindwing whitish, irrorated with brown. Colombia (Rio Cauca).

15. Genus: **Oligia** Hbn.

Extraordinarily similar to *Trachea* from which it chiefly differs in the loose, not parted tufts on the thorax. The abdominal tufts are less developed and only extend to the third ring. Chiefly distributed in the North American faunal region, containing numbers of species of mostly small sizes. As to the palearctic species cf. Vol. III, p. 172.

- violacea*. **O. violacea** Grt. (33 g) is a larger, quite pale yellowish-red species irrorated with brown, the basal and marginal areas being more yellowish white. The reddish, indistinct transverse lines are finely crenulate, the olive-yellowish upper maculae somewhat darker, the reniform macula surrounded with orange. Behind the whitish undulate line there are in the centre and at the anal angle blackish spots. Hindwing of a pure white. Colorado, California, Sierra Nevada. A very variable species. — The form **bridghami** G. & R. (33 i) is very similar, somewhat smaller, with darker, brownish hindwings, in the median area of the forewing more brownish slightly irrorated with bluish-white, in the basal and marginal areas bluish-white, the maculae smaller and not yellowish but white. Eastern United States. — **egens** Wkr. (33 g) is likewise similar but still much darker, on its olive-brownish ground irrorated with purple reddish, in the basal and postmedian areas whitish with small whitish maculae centred and surrounded with olive. The marginal area is olive-brown with black vein-

streaks. Hindwing brownish-black. Canada. — The form **transfrons** *Neum.* (= *ferrealis* *Grt.*), described *transfrons*. as *Polia*, and probably the same as *iridis* *Dyar*, is probably nothing else but *bridghami* (33 i).

O. fractilinea *Grt.* (33 i) represents a very variable small species being brownish-grey on the forewing, *fractilinea*. mixed with reddish, in some parts (especially in the costal half of the median area) darkened. in the basal and postmedian areas more whitish. The small maculae are finely surrounded with black, the hindwing is ochre-brownish. — The form **vulgivaga** *Morr.* is more reddish-brown mixed with some purple grey, without the whitish *vulgivaga*. areas, in the marginal area blackish. — **mactatoides** *B. & McD.* (33 c), in contrast with it, is more whitish-grey, *mactatoides*. only slightly mixed with reddish. — The western race, from Utah, **albescens** *B. & McD.* (33 i) is quite pale *albescens*. yellowish-reddish with faded markings, also the hindwing is much lighter; only at the costal and distal margins there is some darker irroration. — **una** *Streck.* is quite uniformly brownish-grey, the transverse lines on the *una*. the submedian fold connected by a black streak. The latter form is described from Wisconsin, whilst the others are widely distributed from Canada to Colorado and New Mexico.

O. arbora *B. & McD.* (33 i) is apparently allied to none of the other species. Forewing deep purple *arbora*. brown, with double, lighter filled transverse lines, the maculae finely surrounded with black, at the reniform macula outside with 3 white dots, behind the coniform macula before the postmedian line spotted black. Marginal area darker, somewhat blue-scaled, hindwing smoky-grey. Arizona.

O. misera *Grt.* (33 b). Forewing on the dark red-brown ground irrorated with blackish, with indistinct *misera*. transverse lines which are spotted yellowish-grey on the averted sides, the maculae are surrounded by black, in the reniform macula there is a small whitish luna; instead of the undulate line there are small yellowish-white spots. Hindwing reddish greyish-brown, at the margin darker. United States.

O. minuscula *Morr.* (33 k) is smaller, more purple grey, with a black connecting streak between *minuscula*. the transverse lines on the submedian fold; the small maculae are in whitish rings, the reniform macula without a small whitish luna. Hindwing greyish-brown. Canada to Massachusetts.

O. diversicolor *Morr.* (33 i) is distinguished by the contrast between the dark brown basal area *diversicolor*. and the light distal part of the forewing; the anterior transverse line is double, filled up with whitish, the brown-centred maculae are finely surrounded with black. Hindwing light brown, at the margin darker. United States (New Hampshire, Massachusetts, New York). — The straw-coloured larva with a pink hue on the dorsum bores, with its head turned down, into *Scirpus cyperinus* in July and pupates in the earth.

O. semicana *Wkr.* (= *latireptana* *Grt.*, *hausta* *Grt.*) (33 a) is very similar to *diversicolor*, but only half *semicana*. its size; both the transverse lines, in the place of the coniform macula, are connected by a black streak, also the posterior transverse line is double, filled up with whitish. Hindwing brownish-grey. at the margin somewhat darkened. United States to New Mexico.

O. exhausta *Sm.* (33 i) is also a very small species, light brownish-grey, in the median area darker *exhausta*. irrorated, with double transverse lines filled up with whitish, and vein-dots behind the distal line, and a black streak connecting the two lines on the submedian fold; before the indistinct pale undulate line irrorated with brownish-grey. Hindwing smoky-grey. Atlantic States.

O. tonsa *Grt.* (33 i) is another small species of a greyish-black ground-colour, the double transverse *tonsa*. lines filled up with grey and submedianly connected; the grey-centred maculae are in whitish rings, between them there runs an intense black median shadow; behind the grey, darker shaded undulate line the marginal area is darkened. Hindwing greyish-brown, at the margin darker. Nevada, Arizona. An extremely variable species. — The form **fasciata** *B. & McD.* (33 k) is distinguished by the very light, greyish-white forewing with *fasciata*. a distinctly prominent dark median band; described from Utah. — **subjuncta** *Sm.* (33 k) also has a somewhat *subjuncta*. more prominently dark brown median area. — **laevigata** *Sm.* (33 l) is the form with the basal area darkened *laevigata*. by black, whereas the whole postmedian area is greyish-white. The latter form is known from Colorado and California, whilst *subjuncta* is known more from northern districts, such as Canada.

O. includens *Wkr.* (= *norma* *Morr.*, *penita* *Morr.*, *mariae* *Grt.*) (33 l). Forewing ochre-reddish with *includens*. an oblique band from the apex and the basal half of the hindmargin being much lighter; the anterior transverse line is almost straight, the feeble posterior line is distally accompanied by the light apical shadow; the ring-macula is absent, the reniform macula is a small whitish luna on a blackish spot which is suffused with black in the form **lunaris** *Strd.* (= ab. 1 *Hmps.*). Canada, Eastern and Central States. — The brownish larva bores *lunaris*. into *Carcx stricta*.

O. nyctichroa *Jones* (33 l) has dark red-brown forewings, the basal area, the distal half of the median *nyctichroa*. area, and the marginal area being irrorated with black; transverse lines double, filled up with grey, between the small grey maculae with a straight black median line; in the marginal area there are black internerval streaks. Hindwing blackish-brown, at the anal angle with a small white and black spot. Brazil,

16. Genus: **Agroperina** *Hmps.*

One of the most difficult genera, about which Mr. FOSTER H. BENJAMIN of Decatur most kindly supplied us with the most detailed informations which enable us to shed some light on this genus, and to which we therefore refer in the following, frequently repeating the original text. We are besides aided by reliably determined specimens which were compared with the types and which were most liberally placed at our disposal in order to have them figured. From this genus forth, also in future typical specimens of North American species will be placed at our disposal, so that we shall be able to supply figures drawn from nature of this fauna being so little known in Europe. We therefore most gladly avail ourselves of the opportunity of expressing our greatest thankfulness for this assistance afforded on so large a scale by Dr. WM. BARNES at Decatur, being the owner of the largest and most polytypical collection of North American species, through the kind mediation of Mr. BENJAMIN.

The genus is very near to *Parastichtis* and *Trachea* from which it differs in the admixture of hairs among the hair-like scales of the thorax; the thorax exhibits in the centre a very little developed, twice keeled median tuft, the abdomen on the first rings small tufts, at the base hair, and laterally hair-tufts. The insects placed to this genus partly exhibit doubtless resemblances to the genus *Protagrotis* which is probably wrongly inserted in the Agrotids. Besides North American species also a tropical representative has been described, though it is doubtfully placed here.

- dubitans.* **A. dubitans** *Wkr.* (34 a) is a large blackish-brown species with a purple tint and some white irroration, with rather indistinct, somewhat grey-edged transverse lines and small maculae in greyish-white rings, the reniform macula with a yellowish-white lunula in the centre; the white striae of the undulate line proximally exhibit small black sagittae. Hindwing greyish-brown, at the margin darker. — *insignata* *Wkr.* (= *sputator* *Grt.*) which was considered a synonym by HAMPSON is somewhat redder than the type of *dubitans* and, in this respect, forms the intermediary between *dubitans* and *cogitata*. SMITH even takes it to be a synonym of *cogitata* which, however, most probably is merely a form of *dubitans*. Canada to New York, Pennsylvania, and Ohio.
- cogitata.* **A. cogitata** *Wkr.* (34 a) has the red-brown colour of the wings not irrorated with blackish-brown as *dubitans* which it otherwise resembles very much; between the maculae there is a somewhat more distinct median shadow; hindwing somewhat lighter and with reddish fringes. Canada to California.
- lateritia.* **A. lateritia** *Hufn.* (34 a). This well-known palearctic species which was already described in Vol. III, p. 166, and figured there on plate 39 i, occurs in America from Canada to Colorado in a very similar form which we are able to figure here.
- obliviosa.* **A. obliviosa** *Wkr.* is so very similar to *lateritia* that it was treated as a synonym by HAMPSON. It is, however, a distinct species of a uniformly greyish-brown ground-colour, without any darker contrasts, with an indistinct coniform macula and a more dentate postmedian line which is towards the hindmargin bordered with white. The undulate line is extinct without dark shading. Rocky Mountains.
- conradi.* **A. conradi** *Grt.* (34 a) is perhaps only a somewhat more brightly coloured redder form of the preceding, with better developed markings. Forewing on the whitish ground strewn with a bright reddish brown, in the median and marginal areas somewhat darker, in the postmedian area, however, light coloured; the dentate transverse lines are on the averted sides bordered with whitish, behind the distal line there are vein-dots; the small maculae are in whitish rings and centred with brownish, the reniform macula is proximally on the median somewhat produced, the whitish undulate line is proximally shaded with brown. Hindwing brownish, at the margin a little darker. Canada to Arizona. — *nada* *Strd.* (= ab. 1 *Hmps.*), according to HAMPSON, is a somewhat redder form, but for the present nothing certain can be told about it; perhaps it is identical with *pendina* (34 b).
- citima.* **A. citima** *Grt.* (34 a) was considered by HAMPSON to be a synonym of *conradi* to which it is very similar, but it differs from it in the more distinct transverse lines and maculae and generally in a somewhat stronger median shadow. Discovered in Arizona and probably a subspecies of *conradi*.
- indela.* **A. indela** *Sm.* (= *morna* *Hmps.* nec *Streck.*) (34 b) and the two next species have been omitted in nearly all the catalogues; it looks like a yellowish *conradi* with reddish irroration, quite uniform, without any strewing, and with entirely effaced marking, as if it were washed off; it is somewhat variable, but nevertheless of a characteristic exterior and not to be mistaken for *conradi*; the antennae are slightly stronger than in *conradi*. Wyoming, Idaho, Colorado, Montana, Washington, in July and August.
- lineosa.* **A. lineosa** *Sm.* (= ? *palliderufa* *Strd.* = ab. 1 *Hmps.*) (34 b) is easily mistaken for *indela*, but the genitals are different; the transverse markings are fine and distinct, although not contrastingly relieved; it also differs in the distinct median shadow and the reniform macula being darker in its lower half. Alberta, Manitoba in July.

A. pendina Sm. (= saturator Strd., = ab. 1 Hmps.) (34 b) differs from the two preceding in the *pendina*, monotonously deep reddish colour in which all the markings are quite extinct. Hindwing yellowish with an uncommonly distinct, broad, smoky grey marginal band, a narrow dark median line and a more or less distinct median luna; in the forewing it resembles more *indela*, in the hindwing *lineosa*. In the male antennae the indentations of the joints are somewhat more distinctly marked than in the others; in the shape of the genitals it resembles *indela* most. — The form **palliderufa** Strd. (= ab. 1 Hmps.) is probably a somewhat lighter form *palliderufa*, approximating *lineosa*, with which it may be identical, as we have mentioned there as doubtful. Alberta, Manitoba British Columbia. Perhaps all 3 are forms of *conradi* (34 a).

A. inficita Wkr. (34 b) is a bright red-brown species with single red-brown transverse lines which, *inficita*, on the averted sides, are bordered with a somewhat lighter colour, and the maculae in indistinctly lighter rings, the lighter undulate line being proximally bordered with a somewhat deeper red-brown colour, with darker vein-streaks behind it. Hindwing red-brown. Described from Canada. — **belangeri** Morr. is perhaps a darker *belangeri*, form and not synonymous, perhaps also a subspecies of *conradi*, not rarely occurring from New Foundland to Quebec.

A. popofensis Sm. (34 b) is most closely allied to *indela* and may only be a northern race of it. Forewing *popofensis*, dull ochre-yellowish, in the distal half of the median area tinted reddish, only the posterior transverse line marked by small black vein-dots, maculae surrounded by whitish, the reniform macula below filled up with black. Hindwing brownish-grey with yellowish fringes. The species was described as a *Luperina* and originates from Alaska.

A. satina Streck. (34 e). Forewing dull brown with a black basal ray, indistinct basal and subterminal *satina*, lines, the anterior transverse line being black, above straight, below the cell very much bent outwards, the posterior line on the veins somewhat dentate; the maculae are small light unmarked spots, the coniform macula is a short black streak. Hindwing blackish-brown, towards the base lighter. Anticosti.

A. morna Streck. (= *hulstii* Grt.) (34 e) is a rare species which does not agree well with the other *morna*, species and apparently is allied to *Luperina passer* (34 g) which represents a transition to the genus *Sidemia*. *morna* agrees best with the form *conspicua* of *passer* and has the same marking, but it has a reddish yellowish-brown colour without black strewing, with dark reddish-brown markings, the median area shaded with reddish-brown. HAMPSON did not recognise *morna* correctly, his figure belongs to *indela*. Canada to Colorado.

A. lutosa Andr. (34 e). Forewing greyish-white, strewn with reddish-brown, with darker dentate *lutosa*, transverse lines and blackish vein-dots behind the distal line, the maculae in feebly lighter rings; undulate line light, proximally shaded with brown. Hindwing light brown. Central and Eastern States.

A. helva Grt. (34 e) is very similarly marked as *lutosa*, but of a very much brighter reddish-yellow *helva*, colour with distinct double transverse lines, the reniform macula in the upper half pupilled with blackish-brown. Hindwing yellowish greyish-brown. Canada to Pennsylvania and New Jersey.

A. insana Dgn., doubtfully placed here, „is the only tropical species with quite light yellowish-brown *insana*, forewings without any distinct markings; the equally coloured maculae hardly contrast with the ground, nor does the postmedian line; only the brown marginal dots are more distinct. Hindwing yellowish. Colombia (Quindiu Pass) from an altitude of 3000 m.

17. Genus: **Eremobia** Steph.

Distinguished from the preceding genus by the thorax being more roughly covered with hair and intermixed with hair-like scales. Prothorax and metathorax with loose tufts, abdomen on the first rings with tufts. The genus being also besides palearctic contains half a dozen of North American species.

E. hilli Grt. (33 k) is a smaller species with whitish forewing, in some places, particularly in the *hilli*, median area, strewn with brown, with a black basal ray, and black, intense transverse lines being connected by the coniform macula. Hindwing smoky brown. Northern and Eastern States.

E. hanhami B. & Benj. (= *albertina* auct. nec Hmps.) (34 e) is very near to *hilli*, larger, of a more *hanhami*, clumsy structure, with longer wings, less contrastingly marked on the white ground which is strewn with black and brown. The under surface is less blackened. Vancouver. — The figure 33 k is a copy of a sketch, whilst 34 e is drawn from nature.

E. claudens Wkr. (= *leucoscelis* Grt., *fibulata* Morr.) (33 l). Forewing grey, in some places irrorated *claudens*, and strewn with brown, with a black basal ray and intense black transverse lines which are bordered with white on the averted sides. Both are connected by a black streak from the apex of the coniform macula; the whitish maculae are centred with brownish and finely encircled with black, the whitish undulate line is proximally

defined by small brownish lunae. Hindwing blackish-brown. New Foundland and Canada to New York. — *albertina*. **albertina** *Hmps.* (33 l). from Canada, has a more bluish-white ground-colour, and the ring-macula is in typical specimens somewhat more oblique, the coniform macula being much thicker and blacker.

unicincta. **E. uncineta** *Sm.* (33 l) is larger and stronger than the preceding and of a darker brownish-grey colour; the anterior transverse line is entirely absent, the maculae are larger, and the undulate line is proximally bordered by more distinct small dark sagittae. Hindwing, however, lighter. Oregon, California.

tenera. **E. tenera** *Sm.* (33 l) is more intensely tinted rust-brown than the preceding, the transverse lines are more or less double, and the coniform macula is much smaller and feebler; the small maculae are in feeble yellowish rings. Hindwing whitish, only at the margin somewhat brownish, with a central spot and a post-median line. From Alaska.

alticola. **E. alticola** *Sm.* (33 k). Forewing greenish-white, thickly strewn with dark brown, as far as the postmedian line tinted with a bluish green, with brown, finely dentate transverse lines, the maculae surrounded with brown. Hindwing greyish-brown. From the mountains of Colorado (Gibson Mt.).

maillardi. **E. maillardi** *Geyer*. This species being wide-spread in the palearctic regions (cf. Vol. III, p. 117, pl. 41 f), together with its smaller greyish-brown form *exulis* *Lef.*, occurs in Greenland and Labrador.

18. Genus: **Taeniosea** *Grt.*

Very similar to the preceding genus from which it chiefly differs in the somewhat longer, porrect last palpal joint, in its more slender structure, only the first abdominal ring exhibiting a tuft. But one rather variable species has been described so far.

discivaria. **T. discivaria** *Wkr.* (34 d). In the type the forewing is grey mixed with purple reddish, with double transverse lines filled up with grey, the grey maculae being somewhat strewn with red are in lighter rings, the reniform macula below dark-pupilled; behind the distal transverse line there are double black vein-dots; the indistinct light undulate line is proximally bordered with brown, behind it the marginal area is reddish-brown. Hindwing greyish-brown. — Whilst in the type the antemedian and postmedian areas are contrastingly lighter yellowish, the form **perbellis** *Grt.* is more monotonously coloured without the contrasting lighter parts. — *gentilis*. **gentilis** *Grt.* (34 d) is also a more monotonous form, but more brightly tinted with red-brown, with effaced markings. All these forms fly at the same localities and are connected by many transitions. Distributed from Canada to New York.

19. Genus: **Macronoctua** *Grt.*

This genus contains but one very large, robust species resembling the preceding species in the general characters, but the thorax is more abundantly clad with scales, the prothorax showing a sharp triangular tuft, the metathorax a parted tuft. The abdomen likewise only exhibits a tuft on the first ring. The cell of the forewing beneath is covered with hair.

onusta. **M. onusta** *Grt.* (34 d) is a very large species the ochre-reddish ground of which is intensely suffused with black, with double dentate transverse lines and the maculae finely encircled with black, the reniform macula on the median inwardly produced. Hindwing greyish-brown, at the margin darker. Canada, United States to New Jersey, Illinois. — The dingy whitish larva being reddish on the dorsum lives in the bulbs of lilies.

20. Genus: **Monoptya** *Hmps.*

The only species representing the genus hitherto exhibits the thorax purely clad with scales, with loose tufts on the prothorax and metathorax and only a dorsal tuft on the first abdominal ring. Forewing broad with a rounded apex.

leucobasis. **M. leucobasis** *Hmps.* (34 d). Forewing black with a lead-coloured grey reflection and single transverse lines, black internerval streaks behind the distal line as far as the margin, the maculae surrounded with black. The white hindwing is in the marginal half blackish-brown. Bahamas.

21. Genus: **Sidemia** *Stgr.*

The genus is predominantly palearctic, with about 20 forms in Europe and North Asia; only one species is known from Ethiopical Africa, whilst in the Indo-Australian region it is apparently quite absent. Some species occur only in single specimens; for instance *S. zollikoferi* is quite sporadically found sometimes here

and sometimes there, and then it entirely disappears again for a long time. As to the characterisation of the genus cf. Vol. III, p. 178.

S. effusoides Dgn. (34 e) is a large greyish-brown species with a black basal ray, double finely *effusoides*. dentate transverse lines, the maculae surrounded by black; the undulate line is composed of light dots with black wedge-shaped spots before it, some of which extend to the posterior transverse line. Hindwing greyish-brown, towards the base lighter. From Ecuador and Peru.

S. callidipes Gn. (34 d) is similar to the preceding, larger, of a more reddish tint, the posterior transverse *callidipes*. line distally bordered with whitish, from the reniform macula to the latter extends a black streak, behind it there are black and white vein-dots. Hindwing yellowish-white, at the margin greyish-brown. Distributed from Brazil to Paraguay.

S. hipparion Drc. (34 e) likewise resembles the two preceding species, it is smaller, of a lustrous reddish- *hipparion*. ochreous colour, and darker irrorated in and below the cell, the anterior transverse line quite indistinct, the posterior line dentate, and with black and white vein-dots behind it, without a reniform macula, from the reniform macula which is below filled up with black a black streak extends to the postmedian line. Hindwing light greyish-brown, at the margin darker. Costa Rica.

S. longula Grt. (34 e). Forewing greyish-white, densely irrorated with brown, with a black basal *longula*. ray and a submedian connecting streak between the transverse lines which are bordered with whitish on the averted sides. The white undulate line proximally shows black sagittae. The whitish hindwing is darkened on the veins and margin. Kansas to New Mexico.

S. devastator Brace (34 e) is a large, greyish-brown species strewn with black with double transverse *devastator*. lines filled up somewhat grey, the maculae in whitish rings and finely surrounded with black, the reniform macula on the median inwardly produced; before the distinct white undulate line with black sagittae. Hindwing light brownish, on the veins and margin darker. From Canada to California and Arizona. — Larva of a bright green colour with a brown head and darker dorsal and lateral lines, living polyphagous and frequently doing harm to all kinds of low kitchen-plants, straw-berries etc.

22. Genus: **Pseudohadena** Alph.

To this genus being otherwise purely palearctic quite recently a North American species is also reckoned. It is chiefly characterized by short bent spines on the outside of the first tarsal joints. The abdomen is tuftless. As to further particulars, vid. Vol. III, p. 182. In the species placed hereto all the tarsal joints exhibit spines, so that, strictly speaking, a new genus would have to be founded. We leave the species here for the present.

P. vulneria Grt. (34 e). Originally described as *Homohadena*, then placed to the genus *Namangana* by *vulneria*. HAMPSON, and of late reckoned hereto. Forewing on the white ground densely irrorated with brown, on the folds tinted with yellowish; a black basal ray, single transverse lines, small white maculae surrounded by black, with a black streak between them in the cell; undulate line composed of minute yellowish-white spots with small black sagittae before them. Utah, Nevada, California, and Arizona.

23. Genus: **Luperina** Bsd.

Chiefly separated from the preceding genera, by the entirely tuftless abdomen exhibiting some hairs only laterally. The thorax is clad with hairs and hair-like scales. Besides a number of palearctic species the genus contains some North American and but few tropical species. Cf. Vol. III, p. 185.

L. jelskii Oberth. (34 e) is a fine, variegated species with brown forewings, in some places mixed with *jelskii*. a greyish green, in the basal area white, with an anterior double black transverse line being filled up with white and distally sealed carmine, the posterior line composed of black moon-spots with red scales behind them; the maculae are small white, red-sealed spots surrounded by black; in the subterminal area there are large white spots with two smaller ones between them, behind them a series of small red spots. Hindwing white with a brown marginal band. Ecuador, Peru.

L. cuppes Dyar (34 f) has bronze-brown forewings, with a somewhat darkened median area and double *cuppes*. transverse lines filled up with light violet, the large maculae filled up with the same colour; the bronze-coloured undulate line is erenulate, the marginal area behind it darkened. Hindwing brown. Mexico.

L. stipata Morr. (34 f). Forewing light brown with darker striped veins, the median and the branches *stipata*. rising from the lower cell-angle, however, white, with a black basal ray, indistinctly double transverse lines submedianly connected by a thick black colour, the small maculae surrounded with black, the reniform macula

on the median prolonged to below the ring-macula; before the undulate line there are small black sagittae. Hindwing yellowish-white. United States to Colorado.

burgessi. **L. burgessi** Morr. (34 f) is now placed by BENJAMIN to *Parastichtis*, together with the two following species. Forewing light yellowish-brown, in the marginal and median areas darkened greyish-brown, with a black basal ray and double transverse lines filled up with whitish and submedianly connected by black; maculae surrounded with black, undulate line whitish, proximally before it there are small brown sagittae. Hindwing white, veins and margin brownish. United States. (Massachusetts, Nebraska, Arizona).

ona. **L. ona** Sm. which HAMPSON considered to be a *Parastichtis*, is a deep brownish-black species with a grey steel-coloured reflection, black double dentate transverse lines which are submedianly connected by a prolongation of the large coniform macula; the maculae are in yellowish-white rings, in the reniform macula distally broken up into dots; instead of the undulate line there are small black sagittae. Hindwing of a pure white, on the veins and margin brownish. Arizona. — **stygia** Dyar (34 f) which was likewise described as *Parastichtis* probably belongs hereto; the hindwing shows a somewhat broader brown margin. Mexico.

relicina. **L. relicina** Morr. (= *migrata* Sm.) (34 f), likewise described as *Parastichtis*, is very much like *burgessi*, with quite indistinct transverse lines, and a distinct longitudinal marking; ring-macula longer, flatter. Hindwing white, on the veins and margin brownish. Texas, Colorado. — The green larva is watered with brown, without the longitudinal linear marking.

posticata. **L. posticata** Harv. (= *veterata* Sm.) (34 g). Forewing ochre-brownish, in the marginal area browner, with brown, somewhat extinct transverse lines which begin at the costal margin with thicker black spots; the maculae are small brownish spots, the reniform macula is on the median inwardly produced; the dentate undulate line proximally shows brown irroration. Hindwing of a pure white. Texas, Colorado, California.

venosa. **L. venosa** Sm. (34 g) has yellowish-red, brown-strewn forewings with brown veins, red-brown transverse lines, and the maculae surrounded with red-brown, between both with a bent faded median line; the undulate line is proximally bordered with red-brown. Hindwing ochre-yellowish, at the margin brownish. A very rare species from Corvallis.

trigona. **L. trigona** Sm. (34 g). Forewing monotonously ochre-reddish grey, in the disc down to the submedian fold and to the undulate line densely irrorated with blackish-brown, from which the maculae of the ground-colour prominently show forth; the transverse lines are rather indistinct, the reniform macula in the lower part dark-pupilled; before the undulate line there are minute black sagittae. Hindwing greyish-brown, the margin remains lighter. Described from Tennessee.

birnata. **L. birnata** Sm. (34 g) is a much smaller species which is perhaps better placed to *passer conspicua* (34 h); the light brown forewing is irrorated with blackish-brown in the costal-marginal half as far as the double posterior transverse line, in a quadrangular spot behind it and in the marginal area; the somewhat lighter maculae are surrounded with blackish. Hindwing dull ochre-brownish. New Foundland, Canada.

innota. **L. innota** Sm. (34 h). Forewing yellowish-grey, strewn with a darker colour, in the median area darker red-brown with quite indistinct transverse lines and indistinct lighter maculae; before the undulate line there is red-brown irroration. Hindwing greyish-brown with yellowish fringes. United States (Yellowstone Park, Idaho, Colorado), very rare.

obtusa. **L. obtusa** Sm. (34 g) was described as *Oligia*; forewing blackish-brown, in the median area darkened, below the cell quite black; the median vein and its branches in the median area finely striped white, edged by the double transverse lines which show a somewhat lighter filling, with the lighter maculae therein; undulate line white-scaled, apex grey. Hindwing greyish-brown. New-Hampshire.

passer. **L. passer** Gn. (= *incallida* Wkr., *loculata* Morr.) (34 g) is a larger, reddish-brown, purple tinted species with a black basal ray, indistinct double transverse lines, the maculae intensely encircled with black, with black streaks extending from the lower end of the reniform macula; the marginal area behind the indistinct undulate line is darkened. Hindwing yellowish-brown, on the veins and margin darkened. — The form **conspicua** Morr. (34 h) has a lighter yellowish hindmarginal and postmedian area. From New Foundland and Canada to Oregon and Colorado.

24. Genus: **Trichoplexia** Hmps.

The genus contains but 2 large species distinguished from the preceding genus by the thorax being purely clad with hair, with loose tufts on the prothorax and metathorax; the coarsely haired abdomen exhibits on the first rings dorsal tufts and lateral hair.

contradicta. **T. contradicta** Sm. (34 h). Forewing of a bright red-brown colour, in the median and marginal areas tinted purple and strewn with black, with a black basal ray and intense black transverse lines, and somewhat lighter maculae which are surrounded with black; behind the rather indistinct undulate line the veins of the marginal area are striped black. Hindwing reddish-brown, with a central spot and 2 darker cross-bands behind it. Canada.

T. exornata *Mschlr.* (34 h) is likewise a northern species, red-brown, in the median area and marginal *exornata*. area darker, with blackish, somewhat faded transverse lines which, on the averted sides, are bordered with somewhat whitish, and with light, brown-centred maculae surrounded by a darker colour; behind the indistinct light undulate line the veins of the marginal area are darker striped. Hindwing light brownish, at the margin darkened and with a purple reddish tint. Canada, New Foundland, and doubtfully in Colorado. It is certainly very near to *contradicta*, and they may even be synonymous.

T. virguncula *Sm.*, according to Dr. BARNES who examined the type, is entirely like *S. devastator virguncula*. (34 e), and both may be synonymous.

25. Genus: **Trigonophora** *Hbn.*

This genus being also known as *Brotolomia* *Led.* or *Phlogophora* *Gn.*, beside palearctic and oriental species being greatly distinguished by the peculiarly notched shape of the wings, also contains a North American species. The thorax is only clad with hair, the collar is most characteristically keel-shaped, the prothorax exhibits a large triangular tuft, the metathorax two large loose tufts; the abdomen is tufted as in the preceding genus. As to the peculiar way in which the wings are folded, when the insect is at rest, cf. Vol. III, p. 190.

T. iris *Gn.* (34 h). The exterior is very much like the well-known palearctic *meticulosa* from which *iris*. it chiefly differs in the not dark-filled V-shaped spot between the maculae. From Canada to New York.

26. Genus: **Chutapha** *Mr.*

Almost the same as the preceding, but the keel of the collar is absent and the distal margin of the forewing is not notched. As to the palearctic species which are partly confined to islands, cf. Vol. III, p. 190, pl. 44; the Indian forms vid. Vol. XI, p. 145, pl. 18 g. — In America but 1 species occurs:

Ch. periculosa *Gn.* (34 i) is very similar to *T. iris*, but beside the anatomical differences the ground- *periculosa*. colour is a somewhat darker greyish-brown, the median area is in the type slightly darker. — In the form **v-brunneum** *Grt.* (34 i) it is of a prominent deep dark velvety brownish-red colour. The species is very widely *v-brunneum*. distributed from New Foundland to Colorado. — The uni-coloured reddish-brown larva with oblique darker striations and a lighter lateral stripe lives on various low plants.

27. Genus: **Conservula** *Grt.*

This genus is also very similar to the preceding genera, with but one species in which the second palpal joint and the frons are long-haired; the thorax is clad with hair and hair-like scales, the prothorax is tuftless, the metathorax shows a loose tuft of a considerable size; the abdomen is roughly haired at the base and laterally, and on the first rings there are tufts.

C. anodonta *Gn.* (34 i) is very similar to the two preceding species in the habitus and scheme of *anodonta*. markings, in the ochre-yellowish, pinkish tinted ground-colour somewhat strewn with brown, with a deep red-brown median area in the shape of a V, and therein with below confluent maculae; behind the rather indistinct undulate line the marginal area is darkened with red-brown. Hindwing pinkish-yellowish. Canada to New York.

28. Genus: **Cobaliodes** *Dyar.*

Separated from the preceding by the longer, straightly porrect, last palpal joint, the ♂ showing long-combed antennae and but one abdominal tuft on the first ring. The genus lives in North America, a closely allied species, *Cobalos dubiosa* (Vol. III, pl. 44 c) was found in Madeira.

C. angelica *Sm.* (34 i) has reddish-brown forewings being darker in the median area, with brown *angelica*. transverse lines being bordered with whitish on the averted sides and being connected by a prolongation of the coniform macula, and with brown-centred maculae in whitish rings; the submedian area is irrorated with whitish, of a purer white towards the hind-margin with minute reddish-brown sagittae in the centre before the undulate line. Hindwing reddish-brown. From California.

C. franciscana *Sm.* (34 i) is somewhat similar, paler, the transverse lines are not connected, the *franciscana*. maculae smaller and quite indistinct; from the posterior line below the centre a light stripe extends to the margin. Hindwing darker greyish-brown. California.

accurata. **C. accurata** *Edw.* (35 a) is also somewhat similar to the preceding, but it has larger, light, below confluent maculae, the cell between them being darkened. Hindwing quite light reddish-brown with purely white fringes. Washington, Arizona.

29. Genus: **Callargyra** *Hmps.*

This genus hitherto contains but one South-American species separated from the preceding by a feeble longitudinal keel on the frons, loose tufts on the prothorax and metathorax, and a parted tuft on the mesothorax; the anterior tarsi exhibit outside on the first joint very much bent claw-like spines; the abdomen shows on the first ring a large tuft, on the two next rings smaller tufts.

bayni. **C. bayni** *Hmps.* (35 a). Forewing greyish-brown, in some places mixed with reddish-yellow; the white transverse lines are on both sides bordered with black, they are intensely notched and nearing each other below the cell, and connected at the hind-margin; the ring-macula is a white dot, the white reniform macula hook-shaped and inwardly produced on the median, centred with yellow; the marginal area is a yellow notched band, the apex is parted by a yellow oblique stripe. Hindwing white, at the margin broad red-brown. Argentina.

30. Genus: **Selambina** *Wkr.*

Proboscis fully developed, frons smooth, male antennae serrate and ciliated; the thorax is almost purely clad with scales, with loose tufts on the prothorax and metathorax, legs unarmed, abdomen tuftless. Likewise only 1 species.

trajiciens. **S. trajiciens** *Wkr.* (35 a). The fiery red forewing is irrorated with brown in the costal area down as far as the median, with purely white transverse lines being bordered with black, the maculae being white; behind the distal line the veins are black-striped. The white hindwing is irrorated with fiery red at the margin. Brazil (Petropolis in the Organ Mountains, Rio de Janeiro).

31. Genus: **Argyrosticta** *Hbn.*

Very closely allied to the preceding genus and chiefly separated by tufts on the first abdominal rings, the second of which is particularly long and above bipartite, the anal tuft being also bipartite. Hind tibiae of ♂ with extraordinarily long hair-tufts. The genus contains quite a number of mostly beautifully red-coloured species decorated with silvery spots. From Southern America.

ditissima. **A. ditissima** *Wkr.* (= *fulgida* *Fldr.*, *croesita* *Schs.*) (35 a). Forewing yellow mixed with red-brown, with yellow veins, with double black transverse lines filled up with yellow, instead of the maculae with silvery spots, in the apical part of the marginal area with large silvery spots. Abdomen and hindwing orange as in the following species. — In ab. **triangularis** *Strd.* (= ab. 1. *Hmps.*) the silvery spot behind the lower cell-angle is triangular, in the type obliquely oval. — Most widely distributed from Mexico to Paraguay.

amoenita. **A. amoenita** *Cr.* (= *ditissima* part. *Drc.*) (35 a) is somewhat similar to the preceding and differs in the more pinkish ground-colour, particularly in the red filling of the transverse lines; the silvery maculae are below connected, and the subapical silvery spots are much smaller and not in a double row, but only consist of a small angular spot with 2 small ones below behind it. Known from Panama and Surinam.

bellinita. **A. bellinita** *Gn.* (35 a) resembles *amoenita* except the subapical silvery spots which are here quite absent; the transverse lines are neither double, but single, the anterior line bordered with pink on the inside, the distal line on both sides bordered with pink. The expanse of the wings is smaller. Panama to Brazil.

meres. **A. meres** *Drc.* (35 a) on the whole resembles *ditissima*, but it has a blackish-brown dorsal stripe on the abdomen by which it is at once discernible. The transverse lines are single, and on the averted sides bordered with grey not yellow or pink. Widely distributed from Colombia, Ecuador, Guiana, and Brazil.

vau-aurea. **A. vau-aurea** *Hmps.* (35 b) by the absence of the subapical silvery spots recalls *bellinita* but it is much larger, and on the abdomen it exhibits the brownish-black dorsal stripe of *meres*; the ground-colour is more a yellowish blackish-brown, the transverse lines are bordered with yellowish. Trinidad and British Guiana.

eurysaces. **A. eurysaces** *Schs.* (35 b) has likewise an orange abdomen being above striped blackish-brown, the two last rings also being dark. Ground-colour in the basal half more steel-coloured grey, only at the hind-margin, postmedianly, and at the distal margin somewhat brown, subterminally again steel-grey; above the reniform macula there is a triangular area edged by white lines; the dark brown undulate line is in some places bordered with white. A very small species of an expanse of only 16 mm. Surinam.

A. phraortes *Drc.* (35 b) is one of the largest species of the genus and, like the following species, *phraortes*, exhibits the abdomen above quite blackish-brown. The ground-colour is deep reddish blackish-brown, the single transverse lines are bordered with yellowish, at the costal margin white; the maculae are surrounded by minute silvery spots; below the apex there is an obliquely quadrangular silvery spot and 2 small ones below it; instead of the undulate line there are minute black submedian lunae distally bordered with yellow. Hindwing very pale yellow with a broad blackish-brown marginal band. Peru and Brazil.

A. scione *Drc.* (35 b). Here the ground-colour is very much lighter red-brown, the subapical silvery *scione* spot oviform, the thorax very light red-brown, not almost black as in the preceding species; the dark brown transverse lines are bordered with grey on the averted sides, the ring-macula is a V-shaped silvery spot, the reniform macula is bordered by several small silvery spots, and in the centre there is a bent silvery streak. Hindwing likewise quite light yellow. Colombia.

A. aurifundens *Wkr.* (= *ditissima* *Drc.* part.) (35 b) is allied to *phraortes*, but somewhat smaller, *aurifundens*, and with a much lighter thorax. On the blackish-brown forewing the veins are lighter striped, the transverse lines, particularly the posterior line, decidedly double, filled up and bordered with grey, the silvery maculae tinted golden, the ring-macula U-shaped; at the apex there is a bi-dentate silvery spot, below it a double row of smaller spots. Hindwing orange, broadly bordered with brown. — In ab. **rufobrunnea** *Strd.* (= ab. 1. *Hmps.*) *rufobrunnea*, (35 b) the whole hindwing is irrorated with red-brown. — ab. **attributionea** *Strd.* (= ab. 2. *Hmps.*) is much darker, *attributionea*, the forewing, head, and thorax are deep blackish-brown. — From Mexico to Peru and Brazil.

A. eubotes *Drc.* (35 b) differs from *aurifundens* in much smaller subapical silvery spots, particularly *eubotes*, the uppermost being small, obliquely wedge-shaped, the series below it not double but single; the transverse lines being composed of black lunulae are on the averted sides bordered with red-brown, the maculae are marked by fine silvery streaks and below connected. — In ab. **apicalis** *Strd.* (= ab. 1. *Hmps.*) the subapical *apicalis*, silvery spots are more or less entirely absent. — Colombia to Brazil.

A. decumana *Fldr.* (= *satana* *Schs.*) (35 b), like the following *panamensis*, exhibits no silvery markings *decumana*, whatever at the apex; the forewing is dark red-brown, the black transverse lines are bordered with yellowish; only the reniform macula has proximally a silvery streak, distally a silvery dot; the undulate line is composed of white lunulae which are proximally spotted black. Hindwing very light yellow with a broad red-brown marginal band. Brazil (São Paulo).

A. panamensis *Drc.* is already very much like the following genus *Eriopus*, owing to the quite blackish- *panamensis*, brown hindwings. The dark brown forewing is strewn with grey, the black transverse lines are on the averted sides bordered with grey, the small maculae in fine grey rings; the whitish, finely crenulate undulate line projects on the lowest radial branch to the margin. Panama.

32. Genus: **Eriopus** *Tr.*

Proboscis fully developed, the frontal hairing is extended into a point. Antennae in most of the species in the male sex secondarily very much modified, exhibiting the most varied twists, knots, and distortions and being set with hair-tufts or single bristly hairs. The legs are also set with the most multifarious hair-tufts. The thorax is clad with scales mixed with hair, the prothorax and metathorax exhibit loose tufts, the mesothorax a parted tuft, the abdomen on the 3 first rings large hair-tufts. The distal margin of the forewing is at the apex and in the centre produced, below the apex mostly rather distinctly concave, the anal angle shows a scaled tooth. Numerous species are distributed in the Old and New World. The larvae, as far as they are known, live on cryptogamian plants: ferns. As to further particulars, cf. Vol. III, p. 193, and Vol. XI, p. 158.

E. jamaicensis *Mschlr.* (35 c). Forewing olive-green, strewn with black, costal margin and centre *jamaicensis*, of hind-margin yellowish like the veins, with double transverse lines filled up with white, the posterior line in the centre more yellowish; the white maculae are centred olive and surrounded with black, the white undulate line is proximally spotted black. Hindwing reddish-brown, at the margin darkened. Jamaica and Cuba.

E. dapsilis *Schs.* (35 c) has black forewings with white veins; from a double white basal line an *dapsilis*, ochreous hair-tuft extends to the anterior transverse line which is distantly remote from the base, extending almost straight down to the submedian fold and then turning towards the base; instead of the maculae there are only fine white streaks; also the posterior transverse line consists of double white lines, the same is the case with the undulate line, and a fine line parting the apex. Hindwing blackish-brown. Costa Rica.

E. floridensis *Gn.* (= *elegantulus* *H.-Schäff.*, *strena* *Grt.*) (35 c) is a very well-known and widely *floridensis*, distributed species with ochre-brownish forewings, double blackish-brown transverse lines filled up with whitish, the brown-centred maculae in whitish rings, with a triangular dark brown costal spot between both; the white undulate line extends in an acute angle to the margin on the lower radial branch. Hindwing yellowish-brown,

at the margin darkened with red-brown. The ♀ is darker red-brown. Very widely distributed from North America (Florida) to Brazil, also in Trinidad. — The young larva is green, the adult larva dark brown, living on ferns and often doing great harm to ferns grown in hot-houses. As the best preventative means, Pyrethrum is recommended.

- argyrosema*. **E. argyrosema** *Hmps.* Forewing bright red-brown with a double whitish subbasal line, the brown anterior transverse line is removed as far as into the centre and proximally bordered with whitish, the double postmedian line filled up with whitish; the ring-macula is an oblique white streak, the reniform macula a silvery Y-shaped mark, laterally bordered with black; the silvery undulate line is on both sides bordered with brown, behind it there is another white undulate line. Hindwing greyish-brown. Peru (Chanchamayo).
- trinitensis*. **E. trinitensis** *Hmps.* (35 c) is a smaller species, somewhat like the ochre-yellow ground of the forewing irrorated with reddish chocolate-brown, towards the apex strewn with white, with brown transverse lines bordered with ochre-yellow on the averted sides; the maculae are in whitish rings and laterally marked with brown, the ring-macula obliquely elliptical, between both a deep chocolate-brown triangular spot from the costal margin; behind the yellowish undulate line being on both sides bordered with brown, the apex is broadly dark brown, proximally bordered by a white line; hindwing red-brown, at the margin darker spotted. Trinidad.
- orses*. **E. orses** *Schs.* is somewhat similar, but much smaller; the forewing is brown, at the base darker, bordered by a fine white subbasal line; the fine blackish-brown transverse lines are on both sides broadly bordered with a lilac pink; the ring-macula is entirely absent, the reniform macula is only marked by a proximally white, distally brown discal streak, behind it there is a lilac shadow; before the whitish dentate undulate line there are darker brown triangular spots, behind it there is an oblique white line to the margin on the end of the lower radial branch. Hindwing greyish-brown. Costa Rica.
- carmioli*. **E. carmioli** *Schs.* (35 c) is still smaller with an expanse of but 21 mm. Forewing brown with a lilac tint, the darker brown transverse lines on the averted sides bordered with white, the posterior line at the costal margin shaded with pink, farther below distally with olive; the maculae are surrounded by whitish, the reniform macula being large and distally produced on the upper median branch; the broad silvery white undulate line is parted by brown beginning from the upper radial branch downwards, and it despatches a white stripe on the lower radial branch to the margin, and a similar one obliquely above it to the apex. Hindwing blackish-brown. Costa Rica.
- leucotoma*. **E. leucotoma** *Drc.* (35 d). Forewing light red-brown, strewn with a lighter colour, with light veins, the red-brown transverse lines filled up with whitish; between the red-brown maculae being bordered with whitish there is a blackish cellular spot; the apical area is yellow, strewn with red-brown; the undulate line is composed of a series of small red-brown lunulae; a white stripe extends to the margin on the lower radial branch. Hindwing reddish dark brown. Peru.
- mexicana*. **E. mexicana** *Drc.* is a smaller species with bright red-brown forewings; the anterior transverse line is whitish, distally bordered with red-brown, the posterior line double, filled up with violettish grey; the ring-macula is a whitish streak bordered with black, the reniform macula inside shows a silvery streak bordered with black, outside two silvery dots; the undulate line consists of 2 red-brown lines, behind them there is a violettish-white, distally black line. Hindwing deep red-brown. Mexico.
- pyrocauta*. **E. pyrocauta** *Hmps.* The red-brown forewing is irrorated with fiery red and strewn with whitish. in the marginal area bluish-grey with indistinct whitish transverse lines, the posterior line on both sides bordered with brown; a bluish-white undulate line is only visible from the lower radial branch downwards. Hindwing red-brown, towards the base fiery red. French Guiana.
- mollissima*. **E. mollissima** *Gn.* (= *rubicunda* *Wkr.*) (35 e). The red-brown forewing is irrorated with dark brown in the costal half of the basal area, in the median area and distal-marginal area, with double transverse lines filled up with red-brown, the maculae surrounded with white and partly silvery, the bordering of the reniform macula is outside broken up into dots; before the white undulate line there are small dark brown sagittae, in the centre and subapically projecting in an acute angle to the margin; hindwing brown. A North American species distributed from Canada to Colorado.
- monetifera*. **E. monetifera** *Gn.* (35 d) is distinguished by particularly abundant silvery markings on the forewing which is yellow mixed with fiery red, the transverse lines being also divided into silvery spots; the largest silvery spot is situate distally below the reniform macula, the coniform macula being also silvery. No undulate line; at the distal margin there are small yellow spots. Hindwing brownish-white. Canada to Florida.
- cordata*. **E. cordata** *Ljung.* (35 d) is very similar, but at once discernible by the dark red-brown hindwings; the forewing is also irrorated with a darker red-brown, and there is a dentate red-brown undulate line. West Indies.
- argentina*. **E. argentina** *Wkr.* (35 d). Forewing on the pinkish-reddish ground irrorated with dark red-brown, the darkest in the marginal area, with double transverse lines filled up with silvery white, the maculae filled up with carmine, the reniform macula below bordered somewhat silvery; the light pink undulate line is pointedly dentate subapically and below the centre as far as the margin. Hindwing deep red-brown. United States (Central and Southern States).

E. plinthobaps *Zerny* (35 d). Forewing olive-green, towards the margin warming more into brown, *plinthobaps*, with double brown transverse lines filled up with light violet, the green maculae finely bordered with yellowish; the apex of the wing is cut off by a straight yellowish fine line extending to the lower radial branch at the distal margin; behind it at the costal margin and before it below it at the distal margin one dark brown triangle each. Hindwing dark red-brown. Described from Bolivia (Rio Songo).

E. granitosa *Gn.* is an entirely unknown species from North America, it was hitherto impossible *granitosa*, to discover the type of it in the Coll. OBERTHÜR.

33. Genus: **Acherdoa** *Wkr.*

The only peculiar species is without proboscis, with a smooth frons, in the ♂ with long-combed antennae, a rough-scaled thorax, with a strong tuft on the metathorax, densely scaled legs and a series of tufts on the abdomen, the middle ones of which are largest, i. e. on the 3rd ring.

A. ferraria *Wkr.* (= *ornata* *Neum.*) (35 d, e) is a small species with broad wings. The bright red- *ferraria*, brown forewing is irrorated with black in the disc, in the marginal area more greyish-brown; the anterior transverse line is proximally bordered with a pure white, the posterior line is double, red-brown, in the lower half filled up with white, the red-brown maculae are surrounded with white; before the whitish undulate line there are analwards small black sagittae. Hindwing blackish-brown. Florida, South Mississippi.

34. Genus: **Meropleon** *Dyar.*

Very closely allied to the preceding genus and separated from it by the very hairy tibiae, in the ♂ serrate antennae, the largest abdominal tuft being on the fourth not third ring; on the hindwing the uppermost radial branch is forked with the subcostal branch, in *Acherdoa* not so. Only one species:

M. cosmion *Dyar* (35 d). Forewing on the violettish-grey ground irrorated with red-brown or a *cosmion*, darker, even black colour, excepting the first three quarters of the costal area and of the upper border of the median and of the maculae, the reniform macula centred somewhat red-brown with a small violettish-grey luna before it; the transverse lines are indistinctly double, filled up with a lighter colour, behind the distal line a row of vein-dots; behind the indistinct undulate line a narrow brown marginal band; between the maculae the cell is irrorated with dark brown; an oblique dark apical shadow unites with another one below the cell, extending to the base of the hind-margin. Hindwing pinkish-yellowish with pink fringes. Mississippi. — The pinkish-brownish larva bores into sugar-cane and, in some places, seems to do much harm.

35. Genus: **Fagitana** *Wkr.*

Separated from the preceding by longer palpi, a developed proboscis, the tuftless thorax being clad with hair-like scales and being intermixed with hairs. The abdomen exhibits minute tufts only on the first rings. Beside a Siberian species (*datanidia*, cf. Vol. III, p. 197, where it is listed in the genus *Virgo* *Stgr.*!), only one American species is known hitherto.

F. littera *Gn.* (= *hueidata* *Wkr.*, *niveicostatus* *Grt.*) (35 e) is irrorated with red-brown on its whitish *littera*, ground, particularly in the median area and at the distal margin, the red-brown transverse lines bordered with white on the inverted sides, and with a white discal streak. Hindwing red-brown with a faded darker median band. Massachusetts, New York, Illinois, Florida.

36. Genus: **Phuphena** *Wkr.*

A small genus closely allied with the preceding, chiefly distinguished by the tuftless thorax being purely clad with scales, the abdomen also being quite tuftless. Hindwing on the discal fold at the margin with an excision.

Ph. cilix *Drc.* (35 e) is distinguished by a very concave distal margin of the forewing below the apex, *cilix*, with a produced tooth below it on the lower radial branch; forewing red-brown at the apex darker, strewn with whitish, with double red-brown transverse lines filled up with whitish, the maculae surrounded with whitish, the reniform macula on the median produced to the ring-macula; the undulate line consists of white small lunae distally bordered with brown and projecting on the lowest radial branch as far as the margin. Hindwing red-brown. Panama.

Ph. fusipennis *Wkr.* (= *trilinea* *Schs.*) (35 e). Forewing reddish ochreous, irrorated and strewn *fusipennis*, with red-brown, in the marginal area lighter, in the median area darker with intense dark brown transverse

lines bordered with white, without a ring-macula and with a red-brown-centred narrow reniform macula; the straight undulate line which is proximad bordered with a faded darker colour is of a rather oblique course. Hindwing coppery brown, at the margin darker. Brazil.

- diagona*. **Ph. diagona** *Hmps.* (35 e) is similarly marked, but more chocolate-brown, and well distinguished by a straight dark brown band obliquely extending through the median area, beginning from the costal margin at the anterior transverse line to the posterior line at the hind-margin. Hindwing coppery red. British Guiana.
- proseltyta*. **Ph. proselyta** *Schs.* (35 e) has red-brown forewings, with a more violet tint in the basal and marginal area, with white transverse lines, the posterior line behind the cell irrorated with brown, between both with a similar, obliquely running, straight line as in *diagona*; on the cross-vein there is a dark brown streak bordered with light; instead of the undulate line there are dark spots, the largest below the costal margin. Hindwing blackish-brown with white fringes. Guatemala.
- transversa*. **Ph. transversa** *Schs.* (35 e) is a somewhat larger, violettish-grey species irrorated with red-brown, in the median area and behind it chocolate-brown with double red-brown transverse lines filled up with violettish-grey, without a ring-macula, the reniform macula in a violettish-grey ring and in the centre striped in the same colour; the undulate line is composed of minute dark brown spots. Hindwing dark red-brown. Brazil. — Larva light yellowish-green with darker longitudinal lines and a yellowish-brown head, pupating between leaves in a web of silk and grass-blades.
- constricta*. **Ph. constricta** *Dgn.* Forewing light brown with broad white transverse lines each edged by two dark brown shadows, the posterior line of an obliquer course than the anterior line, between them with a dark brown discal streak on both sides bordered with white; the undulate line is a white band. Hindwing blackish-brown with white fringes. Paraguay.
- subvenata*. **Ph. subvenata** *Schs.* (35 f). Forewing of a bright brown colour, the costal margin and the bases of the principal veins white, with white transverse lines, the distal one being double, besides with a white oblique line from the rise of the lower median branch to the base of the hind-margin, and with a white horizontal streak at the cell-end; the white undulate line on the lowest radial branch forms an acute angle to the margin where it unites with a white marginal line. Hindwing brown. British Guiana.
- costata*. **Ph. costata** *Schs.* (35 f). Forewing brown mixed with purple brown, at the costal margin broadly yellowish-reddish, posteriorly warming into white; the large maculae are surrounded by a pinkish white, the reniform macula is behind spotted white; transverse lines very fine indistinctly darker brown; before the lilac-brown marginal area there is a darker subterminal shadow. Hindwing dark greyish-brown with a dark median spot. French Guiana.
- multilinea*. **Ph. multilinea** *Schs.* (35 f). Forewing light brown, at the distal margin irrorated with whitish, traversed by many straight darker brown lines, 2 basal ones, 3 antemedian and 3 postmedian ones, behind them with a less distinct, partly interrupted undulate-linear shadow, in the median area with a broader median shadow below the large dark reniform macula. Hindwing blackish-brown with white fringes. Costa Rica.
- zelotypa*. **Ph. zelotypa** *Schs.* (35 f) is on the forewing brown, irrorated with violet, with lighter brown transverse lines bordered with reddish; the maculae are only indicated by light streaks; the undulate line is a straight light, distally darker line; on the distal margin there is a double light line being angular between the lower radial branches, behind it with dark marginal spots, above a larger one, below it smaller ones. Hindwing dark brown with lighter fringes. Described from Costa Rica.
- petrovna*. **Ph. petrovna** *Schs.* (35 f) is a very different small species with narrow light grey wings, with an oblique distal margin, and very easily discernible by the white undulate line which has proximally a broad, deep chocolate-brown band in front of it and on the lower radial branch forms a very acute angle towards the margin; the transverse lines are very oblique and whitish, the posterior line double; between the maculae there is a triangular deep dark brown area in the cell. Hindwing white, at the margin reddish-brown. Brazil.
- u-album*. **Ph. u-album** *Gn.* (= *purpuripennis* *Grt.*, *baliola* *Morr.*) (35 f). One of the largest species with red-brown forewings which are irrorated with purple grey, with rather indistinct red-brown transverse lines, the posterior being dentate, and with a U-shaped white reniform macula; the grey undulate line is distally bordered with red-brown. Hindwing reddish-greyish brown. United States (Massachusetts to Florida).
- parallela*. **Ph. parallela** *Hmps.* (35 f). Forewing bright red-brown, with strong white transverse lines and an oblique white discal streak which is prolonged somewhat proximad on the median; the undulate line is composed of minute red-brown spots. Hindwing light fiery red, towards the base lighter. Bahamas.
- tura*. **Ph. tura** *Drc.* (35 g). The red-brown forewing is mixed with whitish and exhibits double red-brown transverse lines filled up with white; from the V-shaped white reniform macula a faded red median shadow extends to the hind-margin; the undulate line is a white band with small deep red spots behind it. Hindwing red-brown with white fringes. Panama.

Ph. obliqua Sm. (35 f) is somewhat similar to the preceding in the scheme of markings, but darker, *obliqua*. the transverse lines are not white, but filled up with a little grey at most, both the maculae very narrow and obliquely situate close at each other, the red-brown undulate-linear spots proximally not bordered with white. Florida.

37. Genus: **Fracara** Wkr.

The genus contains but one species approximating the preceding genera and being distinguished by the rough scaling on the thorax with loose tufts on the pro- and metathorax, also the abdomen of the small slenderly built insect exhibiting a series of tufts, those on the 3rd and 4th rings being the largest.

F. viridata Stoll (35 g) is a small unmistakable species with whitish bluish-green forewings and scarlet *viridata*. maculae in white rings, the lighter blue marginal area defined towards the darker green postmedian area. Hindwing white, at the margin tinted green. Colombia, Guiana, Brazil.

38. Genus: **Goniotermasia** Hmps.

This genus likewise only contains one small species separated from the preceding species by but one very large dorsal tuft on the abdomen. The little insect is likewise of a slender structure, the forewing below the apex excised and convex on the lowest radial branch.

G. centrimacula Hmps. Forewing red-brown with a silvery grey reflection; the red-brown anterior *centrimacula*. transverse line is proximally bordered with grey, the posterior line is brown, towards the costal margin extinct, behind the cell on both sides shaded with brown; the reniform macula has proximally a white streak which is on both sides bordered with brown, and distally it is bordered by white and black dots, before it in the cell there is a black oblong spot; instead of the undulate line there is a red-brown band which is on both sides bordered with a darker brown colour, before the distal margin in the upper half there is a bent white line as far as the lowest radial branch, below it there are well-defined white streaks which are distally bordered with dark brown. Hindwing dark brownish-grey with whitish fringes. Expanse of wings: 28 mm. Venezuela.

39. Genus: **Chytonix** Grt.

Proboscis developed; palpi rather short, thorax with rough scales, on the prothorax with a loose tuft, on the metathorax with a particularly large tuft; the small insects are likewise of a slender structure, the legs covered with long hairs and with very long spurs. Of the abdominal tufts those on the 3rd and 4th rings are particularly large. In most of the species the forewing is analwards somewhat gnawed out. A rather great number of mostly small species of a chiefly tropical range, though in North America there also occur some species approximating the palearctic *Bryophila*.

Ch. muscosa Schs. (35 g), like the two following species, has the forewing rather very much gnawed *muscosa*. out below the apex, with a produced angle on the lower radial branch. Forewing yellowish red-brown, with black dentate transverse lines and yellowish-green maculae, the reniform macula on the median proximally produced and below the cell united with the ring-macula; behind the dentate blackish undulate line there is at the apex a yellowish-green spot. Hindwing yellowish-brown, at the margin darker. Mexico.

Ch. rufescens Hmps. (35 g). The grey forewing is irrorated with purple red-brown, at the hind-margin *rufescens*. in the median area green with black dentate transverse stripes which are partly bordered with ochreous; the maculae are green, surrounded with brown, the reniform macula is 8-shaped, below the ring-macula there is a second green spot; from a white quadrangular apical spot the white undulate line proceeds. Hindwing yellowish-brown. Brazil (Rio de Janeiro).

Ch. ethela Schs. (35 g) is marked very much like *rufescens*, but of a much brighter red-brown and *ethela*. without the green admixture; the maculae are small pale spots; the white subapical spot is absent and the veins of the marginal area are black-striped. Hindwing brown. Brazil.

Ch. chucha Schs. (35 h). Forewing greenish-grey, strewn with black, with black transverse lines *chucha*. being bordered with white at the costal margin, the distal line also at the hind-margin, the small maculae in white rings, below the ring-macula another similar spot, the reniform macula very much strangulated; behind the distal transverse line there are black and white vein-dots; at the apex there is a whitish spot from which the black undulate line proceeds. Hindwing brown. Brazil.

Ch. leucosema Hmps. is very well distinguished by the male anterior femora being thickly covered with *leucosema*. brown scales. The ochreous forewing is irrorated with red-brown, in the marginal area greyish-green; the yellowish-reddish anterior transverse line is at the costal margin white and on both sides bordered with dark, the dark distal line is dentate and distally extended into white vein-dots. No maculae except a white elliptical

discal spot; the white-dotted undulate line is on the lower radial branch angled as far as the margin. Hindwing coppery brown with white fringes. Venezuela.

- glaucescens.* **Ch. glaucescens** Jones (35 g) has greenish-ochreous forewings mixed with a bluish grey; the anterior transverse line is quite extinct, the posterior line is indicated by a double row of small black lunulae which are distally marked with white; the white undulate line proceeds from a white apical spot. Hindwing yellowish brown. Brazil.
- elegans.* **Ch. elegans** Schs. (35 g) has light green forewings with broad white transverse lines, the posterior line being twice bent and proximally black-scaled, below the cell connected by a black stripe; the ring-macula is black, surrounded with yellowish-reddish, the reniform macula is a white spot, black-centred; the yellowish-reddish undulate line proceeds from a white apical spot, in the grey marginal area there are thick black internerval dots. Hindwing brownish-grey, towards the base whitish with a dark central spot. Costa Rica.
- chlorophila.* **Ch. chlorophila** Drc. (35 h). Forewing light yellowish-green with white, black-dotted transverse lines; between the small whitish maculae there is a black spot being connected by 2 streaks with the costal margin; before and behind the white dentate undulate line there are on the folds blackish-brown spots. Hindwing greyish-brown. Peru.
- haba.* **Ch. haba** Dgn. is very similar to *chlorophila*, but the forewing is silvery white, with a faint green tint, in the cell-end reddish, with indistinct double transverse lines beginning with large black costal-marginal spots; before the reniform macula which is indicated by a black discal streak there is a black costal-marginal spot; before the white undulate line which is marked with black there is a band of red-brown irroration. Hindwing brown with a dark discal spot and postmedian line and white subterminal spots. Ecuador.
- griseorufa.* **Ch. griseorufa** Hmps. (35 h) is on the whitish forewing irrorated with greyish-green and strewn with a darker colour, with faded, white-edged transverse lines, behind the distal line irrorated with bluish-grey in the lower half; the ring-macula is a pinkish-reddish spot, the reniform macula a narrow dark streak bordered with white; the marginal area excepting the apex is irrorated with red-brown, in it extends the white undulate line. Hindwing reddish-brown. The ♀ is whiter, the reniform macula is filled up with black. From Brazil and Trinidad.
- mniochroa.* **Ch. mniochroa** Hmps. (35 h). Forewing moss-green, mixed with white and red-brown, with black transverse lines bordered with white, and small blackish maculae with brown irroration between them; the white undulate line is on both sides bordered with brown, behind it on the discal fold with a dark brown spot. Hindwing brownish-grey. Trinidad.
- pyrrha.* **Ch. pyrrha** Schs. (35 g) has light green forewings, the transverse lines are composed of brown small internerval spots proceeding from larger costal-marginal spots; the ring-macula is a small black dot, the reniform macula is finely bordered with white; the lowest spot of the distal transverse line is very large and distally bordered with white; the undulate line is also composed of small dark spots. Hindwing dark brown. Costa Rica.
- cyanochlora.* **Ch. cyanochlora** Schs. (35 g). Forewing bluish-green with fine black transverse lines, the anterior one bipartite towards the hind-margin; the large ring-shaped maculae are connected and between them a thick black median shadow extends; the fine white undulate line is proximally bordered with black. Hindwing brownish-grey, at the apex and narrowly at the distal margin bluish-green. Costa Rica.
- chlorostigma.* **Ch. chlorostigma** Harv. (= *viridimusca* Sm.) (35 i) is purple grey on the forewing, strewn and irrorated with black, in the proximal half of the median area, and in the marginal area tinted sap-green, with double transverse lines filled up with whitish, the green maculae surrounded with black; the undulate line is proximally bordered fadedly darker. Hindwing dark greyish-brown. Illinois, Texas.
- commixta.* **Ch. commixta** Schs. (35 h) has violettish-grey forewings, at the base of the cell, submedianly, behind the lower cell-end, and in the marginal area irrorated with green; the ring-macula is yellowish-red, the reniform macula white, both centred somewhat green; the black transverse lines are bordered with white, the posterior line is strongly crenulated. Hindwing purple brownish. French Guiana.
- chloë.* **Ch. chloë** Schs. Forewing brown, in some places mixed with lilac, in the basal area subcostally, at the hind-margin and distal margin green, with fine, black transverse lines which are in some places bordered with white; ring-macula black, behind it a green spot, the reniform macula long and narrow, dark green, in a light ring; at the apex there is a large greenish white apical spot, the veins of the marginal area being black. Hindwing dark purple brown. Guiana.
- lophophora.* **Ch. lophophora** Zerny (35 h) has light brown forewings mixed with a darker colour, towards the margin suffused with reddish, with a white, below yellowish basal ray, the double transverse lines filled up with lilac-whitish, the maculae surrounded with lilac-whitish; below the cell there is a violettish-grey shadow as far as the postmedian line, and in the centre of the distal margin and before it there are dark brown spots. Undulate line yellowish-white. Hindwing greyish-brown. From Bolivia (Rio Songo).

Ch. palliatricula Gn. (35 h) is a variable, well-known North American species with greyish-brown, *palliatricula*, black-strewn forewings, the transverse lines above the submedian fold connected by a white stripe, the large brownish maculae surrounded by black. — In the typical form the maculae and the disc are white, in the form *iaspis* Gn. (35 h) irrorated with brown. — From Canada and the United States.

Ch. sensilis Grt. (35 i) has grey forewings which are more or less suffused with red-brown, with black *sensilis*, transverse lines bordered with grey, the maculae surrounded with black, centred somewhat reddish, and with a white strigiform spot from the end of the coniform macula to the posterior transverse line; the undulate line is proximally bordered with a faded brown. Hindwing brownish-grey. — In ab. **submediana** Strd. (= ab. *submediana*, 1. *Hmps.*) the white submedian strigiform spot is absent. — In the form **macdonaldi** Benj. the black stripe is *macdonaldi*, absent, and the white colour expands over the median area. Described from New Jersey. — United States (Massachusetts, New York, New Jersey).

Ch. parvimacula Sm. (35 i) is somewhat similar, smaller, in the basal area and the proximal half of *parvimacula*, the median area much darker, the transverse lines bordered with whitish, from the end of the greenish coniform macula a black stripe, above it a white stripe to the posterior transverse line; the light undulate line is on both sides bordered with greenish. Hindwing greyish-brown with lighter fringe. California.

Ch. laticlava Sm. (35 i), according to BENJAMIN, has an exterior quite similar to *Trachea divesta laticlava*, and may be synonymous; it is lighter grey than the two preceding species, in the median area as far as above the submedian fold brown with blackish transverse lines, the posterior line filled up with whitish; from the short and broad coniform macula a black stripe extends to the posterior transverse line, the large upper light maculae are surrounded with blackish; behind the light undulate line there are on the folds brown triangular spots. Hindwing light brown with a darker postmedian line. Washington.

Ch. bogotica Wkr. (35 i) is a smaller species with greyish-brown, black-strewn forewings, with double *bogotica*, transverse lines filled up with whitish, the whitish upper maculae surrounded with black and centred with brown, between and before them the cell is darkened by black; at the end of the coniform macula there is a minute white dot; the apex is parted by a light diffuse spot. Hindwing light brown, at the margin somewhat darker. Colombia (Bogotá).

Ch. poliosema Dgn. is still much smaller, the body is yellowish-grey, the forewing covered with blackish- *poliosema*, grey feathery scales, with 2 black single transverse lines, the posterior line in the shape of an angle with the apex near the anal angle; in the basal area some white irroration; no maculae. Hindwing yellowish-white with a darker postmedian line and marginal shading. Argentina.

40. Genus: **Chytonidia** Schs.

Very closely allied to the preceding from which it is separated by exhibiting but one tuft on the first abdominal ring; besides, according to the original diagnose, the forewing lacks the areola and the prothorax is without the loose tuft, the spurs being shorter. Only 1 species.

Ch. chloristis Schs. (35 i). Forewing lilac-brown, basal area, hind-margin, a spot behind the ring- *chloristis*, macula, the reniform macula and the undulate line are green, a large apical spot whitish-green, with fine black transverse lines, the posterior line dentate, behind it black and white vein-dots, before the anterior line likewise a white, submedian dot. Hindwing greyish-brown with pinkish-brown fringe. French Guiana.

41. Genus: **Parabryophila** Dyar.

Proboscis feeble, frons with a rounded projection; thorax almost entirely clad with scales, the prothorax with a parted, the metathorax with a plain loose tuft, the abdomen with small tufts on the first and fourth rings. Only 1 species:

P. edobasis Dyar (35 k). Forewing violet purple, in the median area grey, at the base of the hind- *edobasis*, margin, at the apex and anal angle spotted light yellow, in the basal area and subterminally reddish. Transverse lines feebly lighter, the proximal line double; the small ring-macula in a light ring, the reniform macula is large, irrorated with white, centred with reddish. Hindwing white with a small discal spot and darker shading at the apex and anal angle. Mexico.

42. Genus: **Neophaenis** Hmps.

Also exteriorly similar to the palearctic genus *Polyphaenis*. Proboscis developed, the frontal hairs produced into a small tip; thorax covered with broad flat scales, without any tufts; structure slender, the middle and posterior tibiae with smooth scales; abdomen with small tufts on the first rings.

- respondens*. **N. respondens** Wkr. (= *ochraceata* Wkr.) (35 i). This beautiful species has bright emerald-green forewings more or less strewn with white, strewn with black in a very variable extent, with black crenulate transverse lines, and large maculae which are surrounded by black. Hindwing orange-red, with a blackish-
aurea. brown apical spot and a broad subterminal band. Mexico to Brazil. — In the form **aurea** Schs., from Venezuela, the forewing is irrorated with blackish-brown in the hindmarginal half of the median area, and the hindwing
trinitatis. lacks the subterminal band, only the large apical spot being present. — The form **trinitatis** Strd. (= ab. 1. *Hmps.*) forms a transition by the subterminal band of the hindwing being shortened; on the forewing the black markings are extinct, except the costal-marginal part. Trinidad.
- lichena*. **N. lichena** Hmps. is similar, the white forewing is irrorated with a yellowish green, below the discal fold from the anterior transverse line to the undulate line and before the latter as far as the costal margin dark brown, strewn with grey; the black markings are similar to the preceding, but the ring-macula is absent and the reniform macula is larger. Hindwing golden yellow with a very large blackish-brown apical spot and white, towards the apex brown-speckled fringes. Venezuela.
- catocala*. **N. catocala** Hmps. Forewing yellowish-green, in some places irrorated with light brown, with double black transverse lines, on the posterior line as in the preceding on the discal fold with a black streak to the margin; all the 3 maculae present and incompletely surrounded with black; before the whitish undulate line there are blackish-brown spots, and one above the upper median branch behind them. Hindwing light yellow, in the basal half irrorated with brown, with a black distally angled median line and a black subterminal band which despatches 2 black rays to the margin. Expanse of wings: 44 mm. Brazil.
- frauenfeldi*. **N. frauenfeldi** Fldr. is on the forewing in a similar way emerald-green and marked with black as *respondens* (35 i). distinguished by a large blackish-brown apical spot from which a similar band extends to the postmedian line and from there obliquely to right above the anal angle. The hindwing is deep coppery-red, in the basal half irrorated with brown, with a broad faded subterminal band behind which the centre of the margin is somewhat dusted with whitish. Expanse of wings: 52 mm. Guiana, Brazil.
- meterythra*. **N. meterythra** Hmps. (35 k) is smaller than the preceding and differs in the whole forewing being intensely irrorated with blackish-brown, only the undulate line and a marginal spot in the centre behind it being of a pure green. The ♀ is in some places irrorated with a brownish white. Sa. Lucia; Guadeloupe.
- psittacea*. **N. psittacea** Schs. (35 k) is a smaller slender species, on the emerald-green forewing marked similarly as the others, but easily separated by the plain greyish-brown hindwing. Mexico, Panama, Guiana.
- aedemon*. **N. aedemon** Dyar (35 k) is likewise a small species with green forewings, mixed with black, with the same markings, double dentate transverse lines, the posterior line above filled up with white, below distally bordered with white; a submarginal row of almost confluent black spots, the blackened marginal area in the middle interrupted by green. Hindwing black, at the anal angle and on the fringe green. British Guiana.

43. Genus: **Melagramma** Hmps.

Separated from the preceding genus by the smooth frons, a much longer last palpal joint, and quite tuftless abdomen. But one small species.

- expetita*. **M. expetita** Wkr. (35 k). The white forewing is strewn with black and dark brown, the most intensely in the apical half of the costal margin, with thin black transverse lines, a black dot in the centre of the cell, and a bent discal streak; the apex is parted by a faded dark patch, the whitish undulate line is proximally defined by a blackish-brownish band. Hindwing yellowish-brown, at the margin darker. Brazil and Argentina

44. Genus: **Agrotisia** Hmps.

From the closely allied genus *Neophaenis* only discernible by the tuftless abdomen. Only 1 species:

- subhyalina*. **A. subhyalina** Hmps. (35 k) is a larger species with a yellowish-brown, in the disc semi-transparent forewing, with blackish single dentate transverse lines, a dot forming the ring-macula, and a faded dark moon-spot forming the reniform macula; in the somewhat darkened marginal area a dentate undulate line is feebly discernible. Hindwing transparent white with brownish veins and margin. Peru, Argentina.

45. Genus: **Polionycta** Hmps.

Distinguished from *Melagramma* by still longer palpi and a small tuft on the base of the abdomen; the smoothly sealed thorax is tuftless as in *Melagramma*. But one species:

P. apicata *Hmps.* (= *dimorpha* *Dyar*) (35 k) is on the silvery grey forewing irrorated with light *apicata*. brown and in some places with red-brown, with a triangular dark brown costal-marginal spot in the centre, and a large dark brown apical spot; the undulate transverse lines are double, the maculae surrounded with red-brown, the strangulated reniform macula dark-centred; undulate line indistinctly light. Hindwing coppery brown, before the grey marginal lunae darkened. Panama.

46. Genus: **Matopo** *Dist.*

To this otherwise purely African genus two South American species have been reckoned of late. Proboscis developed; the frons exhibits a large rounded projection with a horny plate below it; the thorax is scaled and exhibits loose tufts in front and behind, whilst the abdomen only shows a basal tuft.

M. neotropicalis *Jones* (36 a). Head and thorax lustrous black, the forewing on the whitish ground *neotropi-* irrorated with light red-brown, in the apical half of the costal margin darkened by blackish-brown; the anterior *calis* transverse line and the ring-macula are absent, only a double median line and behind it a whitish distal transverse line are present; the reniform macula is a small whitish luna; in the marginal area the veins and between them internerval streaks are dark-striped, in the lower half partly connected in the shape of a very elongate V. Hindwing of a pure white. Brazil.

M. giacomellii *Dgn.* Forewing grey, in the distal half except the margins white, this white ground *giacomellii*. is traversed by a grey band-shaped line obliquely extending from the apex to the hind-margin, in which line the veins are prominently blackened; the maculae are white, the reniform macula in the middle traversed by the grey cross-vein. Hindwing diaphanous white. Argentina.

47. Genus: **Delta** *Savlm.*

Beside African and oriental species, this genus also contains South American representatives recalling *Cucullia* in the long narrow shape of the wings and the somewhat keel-shaped erect collar. The thoracal covering is intermixed with scales, the dorsum exhibits a comb-shaped, parted hair-tuft, the abdomen shows tufts on the first rings; the legs are long-haired.

D. goniosema *Hmps.* (= *ramosula* *Drc.* nec *Gn.*) (35 k). Forewing light grey, irrorated with reddish- *goniosema*. brown, particularly around the lower cell-end, with darker striped veins and a black basal ray; the ring-macula is very long and oblique, the reniform macula white, centred with reddish, and inwardly produced on the median; in the subterminal area there are black internerval streaks, and the ends of the upper median branch and lowest radial branch are marked in the shape of a pointed W. Hindwing light brownish. Mexico.

D. ramosula *Gn.* (36 a) is very similar to the preceding, larger on an average, the reniform macula *ramosula*. below not produced and thereby easily separated. Canada; Northern, Eastern, and Central States.

D. stewarti *Grt.* (36 a) is at once discernible by much darker hindwings which are deep blackish-brown: *stewarti*. also the forewing is on the violettish-grey ground irrorated with a darker red-brown, the maculae are more distinctly marked. United States (Washington to California).

D. nea *Drc.* (36 a) has much narrower forewings which are irrorated with reddish-ochreous, at the *nea*. costal margin and hind-margin with dark brown; the partly extinct transverse lines are very strongly dentate; no maculae except a narrow lunula representing the reniform macula; subapically at the distal margin a brown triangular spot. Hindwing yellowish-white, at the margin and on the veins darkened. Mexico to Colombia and Bolivia.

D. albiclava *Drc.* (36 a) is smaller, much darker red-brown with black-striped veins of the marginal *albiclava*. area, with a black basal ray as far as the very long white reniform macula which is surrounded with black; behind the yellowish lunula of the reniform macula there is a distinct black dentate posterior transverse line, the apex is parted by a light patch. Hindwing reddish-brown with darker striped veins. Peru.

48. Genus: **Andropolia** *Grt.*

A large genus of North-American species with a developed proboscis, a short, straightly porrect last palpal joint, with hair-fillets on the smooth frons, the thorax clad with scales intermixed with hairs; pro- and metathorax with loose tufts, the abdomen which is roughly haired at the base exhibits quite a series of such tufts.

- diversilineata*. **A. diversilineata** Grt. (36 b) is a most variable species. The type has the greyish-white forewing rather densely strewn with blackish-brown, the dentate transverse lines bordered with whitish, the small maculae in white rings and surrounded with black; instead of the undulate line there are small black sagittae before the darkened marginal area. Hindwing whitish, on the veins and margin brownish. — Lighter, less distinctly marked specimens are called **illepida** Grt. (36 b), still lighter specimens with a prominently darkened marginal area are **resoluta** Sm. (36 b), whilst entirely white specimens with intense black markings belong to the form **submissa** Sm. (36 c). Colorado, Utah, New Mexico, California, Arizona.
- contacta*. **A. contacta** Wkr. (= *aspera* Morr., *diffusilis* Harv., *sansar* Streck., *extincta* Sm.) (36 a, e) is one of the largest species, the bluish-grey forewing irrorated with brown, in the marginal area darker, with strongly dentate transverse lines bordered with white on the averted sides, the maculae finely eneiored with black; the distally very strongly dentate subterminal area is defined by light grey towards the darkened marginal area. Hindwing greyish-brown. Canada to Washington. — The form **pulverulenta** Sm. (36 c), from Canada, is of a purer bluish grey, strewn with black, and the marginal area is not darkened.
- pallifera*. **A. pallifera** Grt. (36 b) is a lighter species, greyish-white, irrorated with reddish-brown, with double crenulate transverse lines, a large brown coniform macula surrounded by black, and large upper maculae. Hindwing yellowish greyish brown, at the margin darker. Illinois. According to BENJAMIN, it may be = *Eurotype medialis*.
- ochracea*. **A. ochracea** Sm. (36 d). Forewing more yellowish, in the median area somewhat darker, the dentate transverse lines single, submedianly connected by a dark streak; the large maculae are laterally marked with ochre-yellow, the coniform macula is absent; instead of the undulate line there are yellowish lunulae with black sagittae in front of them. Hindwing whitish with an interrupted black marginal line. United States (Iowa). HAMPSON's figure which we copied is too dark, too contrasting, the hindwing much too dark.
- dispar*. **A. dispar** Sm. (36 d) is similar to *ochracea*, strewn with a darker brownish grey, the anterior transverse line is almost entirely absent, before the much smaller ring-macula there is a black angular spot. Hindwing of a pure white. Colorado.
- olorina*. **A. olorina** Grt. is a very light, black-strewn species with darker veins, single dentate transverse lines, the maculae surrounded with black; the black dentate undulate line returns on the folds to the postmedian line. The white hindwing is at the base of the fringe strewn with brown. California.
- aedon*. **A. aedon** Grt. (36 e). Probably only the Californian representative of *theodori* without its reddish-yellow admixture; darker grey than *olorina* and probably also only a large subspecies, on the whitish ground strewn with dark brown and in some places irrorated with red-brown, with blackened veins, dentate black transverse lines and the maculae intensely surrounded with black; the black dentate undulate line is on the two folds inwardly crenulate as far as the postmedian line. Hindwing yellowish-white, on the margin darker. Washington to Colorado and Nevada.
- theodori*. **A. theodori** Grt. (36 d) is the lightest species, almost white with reddish-brown irroration, the veins striped blackish, strongly notched transverse lines and the maculae feebly surrounded with red-brown; the black notched undulate line extends as in *aedon*, behind it more intensely irrorated. Hindwing white, feebly brownish on the veins and margin. The ♀ is generally irrorated with a darker colour. — The form **vancouvera** Strd. (= ab. 1. *Hmps.*) is a much darker brown form with a red-brown abdomen, and the hindwing uniformly suffused with red brown. — **epichysis** Grt. (36 d) is the southern form of California, much greyer, on the forewing extensively irrorated with purple reddish, also on the hindwing. — Canada to California and New Mexico.
- olga*. **A. olga** Sm. (36 e) is a much smaller species belonging hereto; forewing white, strewn with black and in some places irrorated with rust-brown, particularly at the base, in the distal half of the median area and subterminally, with single sharply dentate black transverse lines and with a very distinct broad faded median shadow approximating the postmedian line; the undulate line runs as in the two preceding species, analwards a brown shadow darkens a black streak which is visible from the distal margin to the coniform macula; the maculae are surrounded with black and centred with ferruginous brown. Hindwing white, towards the margin feebly darkened by smoky brown. From the Sierra Nevada in California.
- maxima*. **A. maxima** Dyar (36 d) is the most imposing representative of this group, very near to *acera*, but browner; yellowish red-brown with a black basal ray, the dark notched transverse lines bordered with whitish, connected by a black streak prolonged from the pointed coniform macula, the large maculae in whitish rings and centred with yellowish; before the light undulate line there are dark sagittae, behind it dark vein-streaks. Hindwing yellowish-brown, with somewhat darker veins. California.
- acera*. **A. acera** Sm. (36 e). Forewing purple grey, in the median area tinted with red-brown, with a black basal ray and hardly indicated double transverse lines, both being connected by a brown streak from the end of the coniform macula; the two upper maculae are large, above open, below often connected. The undulate

line is only occasionally indicated by brown internerval streaks in the marginal area. Hindwing yellowish grey. Washington, a very rare species.

A. lichena B. & McD. (36 e) of a not quite certain generic position rather resembles one of the pale- *lichena*. arctic species of *Antitype*, or a *Scotogramma*. The dark grey forewing is coarsely strewn with black, ochre-yellow, and white, thus creating the impression of an olive-greenish colour; transverse lines indistinct, faded and bordered with whitish, the posterior line particularly towards the hind-margin being the most distinct and composed of white dots bordered with black; maculae filled up with olive, above and below open; in the darkened marginal area is the rather indistinct lighter undulate line. Hindwing dark smoky-grey. California.

49. Genus: **Lithomoea** Hbn.

Structure almost the same as in the preceding genus, but the thorax of a somewhat quadrangular shape, covered with hair and hair-like scales, likewise with loose tufts on the pro- and metathorax. The abdomen shows a distinct row of tufts, those on the 3rd and 4th rings being very large. The genus contains in America 3 very closely allied species exhibiting great resemblance also to the palearctic *rectilinea* (cf. Vol. III, p. 203. pl. 42 d).

L. xylinoides Gn. (= *contraria* Wkr., *ancocisconensis* Morr.) (36 f) is a well-known species of the same *xylinoides*. scheme of markings as in the palearctic *rectilinea*, but of a much darker brown colour. whereas the median area remains bluish-whitish at the costal margin and hind-margin; the hindmarginal part of the postmedian line is remarkable by being bordered with a purer white. From Canada to New York. — The yellowish-brown, laterally darker brown larva with a broad light lateral stripe lives on various low plants.

L. brunneicrista Sm. (36 f) is the darkest species, very similar to *xylinoides*, but with somewhat *brunnei-* longer teeth on the male antennae, and with a distinctly red-brown dorsal tuft. On the forewing the postmedian *crista*. line is very near to the distal margin, very indistinct and particularly in the upper part not double, filled up with whitish, but single grey. Hindwing on an average somewhat darker. Only from Alberta (Canada), a rare species.

L. indistincta Sm. is at once separable from the very closely allied two preceding species by the *indistincta*. almost absent anterior transverse line of which only a long tooth is left in the submedian region, its point extending to the postmedian line. Canada and Oregon.

50. Genus: **Fota** Grt.

Smaller species with narrow wings, a developed proboscis, short porrect palpi, and a large conical frontal projection with sharp upturned edges, in the centre of which there is a long central point which, however, is covered by long hairs; below it there is a horny plate. The thorax is only covered with scales and exhibits in front and behind loose tufts. The abdomen is tuftless. Anterior tibiae with a short bent spine on the inside. Only 2 species

F. minorata Grt. (= *aperta* Drc. part.) (36 e). Forewing purple grey, particularly at the costal margin *minorata*. somewhat irrorated with brown, with quite indistinct transverse lines, the anterior line being double, filled up with a somewhat lighter colour, and with lighter grey, somewhat brown-centred maculae finely surrounded with black, the reniform macula with a darker median streak; in the marginal area there are fine darker internerval streaks. Hindwing of a pure white. Arizona to Mexico. Much less variable than the similar following species.

F. armata Grt. (36 e) is somewhat larger, the transverse lines are more distinct, the posterior line *armata*. dentate, both connected by a black submedian streak; there is also a light undulate line, subapically traversed by fine black rays; before and between the whitish maculae darkened by deep black. Hindwing white, on the veins and margin hued with yellowish. Arizona. — The form **medioalba** B. & Benj. (36 f) has the basal area *medioalba*. and median area below the cell whitish. — **brunneogrisea** B. & Benj. (36 f) has the basal area brown as well *brunneo-* as a stripe from the reniform macula to the margin towards the apex; below the cell there is a long black streak. *grisea*.

51. Genus: **Fotopsis** Dyar.

Very closely allied to the preceding genus from which it chiefly differs in the absence of the accessory cell; on the forewing the four lowest subcostal branches are united on a common fork. The frons exhibits a rounded conical projection; the abdomen is tuftless as in the preceding genus, the palpi are obliquely turned up; the apex of the forewing is more pointed than in *Fota*. But one species.

sparganiotis. **F. sparganiotis** Dyar (36 f). Forewing grey shaded with brownish through the cell as far as the centre of the margin, with black veins in the marginal area and numerous black dots, also the transverse lines being broken up into dots, the distal line more into small spots; the small reniform macula is surrounded by yellowish and centred with brown, in the brown area behind the cell there are white dots. Hindwing greyish-brown, towards the base lighter. Mexico, Sierra de Guerrero.

52. Genus: **Oxycnemis** Grt.

Distinguished by the stunted proboscis, with very short palpi scarcely extending to the middle of the frons; frons smooth, male antennae serrate; thorax clad with rough hair intermixed with scales, only on the metathorax with a large tuft of curved scales, the abdomen is tuftless; anterior tibia very short and broad with a large bent spine on the inside at the end. Small, slender and slim species with narrow wings and rounded apex.

- advena*. **O. advena** Grt. (= *baboquavaria* Sm.) (36 g). Forewing purple grey, densely irrorated with blackish-brown, with strong black transverse lines being distally somewhat whitish, and with black-encircled maculae, the upper ones more or less whitish, strewn with brown; the apex is parted by a blackish patch extending to the postmedian line. Undulate line merely indicated. Hindwing whitish, at the margin brownish. Arizona.
- pacifica*. — Of **pacifica** Edw., which was hitherto considered as *Acopa*, the type, according to BENJAMIN, has not yet been discovered, but it presumably belongs hereto and may be synonymous.
- mexicana*. **O. mexicana** Dyar (36 g) is on the white ground coarsely strewn with grey and black, in the median area particularly behind the traces of the reniform macula, the lightest in the marginal area, here in the apex with an oblique black patch; transverse lines black, strongly notched, also the subbasal line; maculae almost entirely extinct; before the margin intense black streaks. Hindwing whitish. ♂ antennae almost pectinate. Mexico.
- fusimacula*. **O. fusimacula** Sm. (36 g) is larger than the preceding, likewise on the white ground strewn with black, the most intensely in the median area and marginal area, with black transverse lines, the maculae surrounded with white, the reniform macula above taperingly produced distally and proximally; the black apical shadow as in the preceding; undulate line scarcely lighter, behind it with black veins of the marginal area. Hindwing white, at the margin brownish. Arizona.
- orbicularis*. **O. orbicularis** McD. (36 g). Forewing light grey, darker irrorated, without any transverse lines; the ring-macula is large, in a white ring and dark-centred, encircled by a fine black line which extends as far as the small white lunula of the reniform macula being inside bordered with black and outside shaded with ferruginous brown; the white undulate line is distinct only in the uppermost portion and parts here the black apical shadow, whilst analwards it is traversed by a black internerval ray. Hindwing diaphanous whitish, towards the margin smoky. Extremely rare, from Utah.
- gustis*. **O. gustis** Sm. has bluish-grey forewings, irrorated with white in the basal area and the cell, with feeble blackish transverse lines, behind the distal line analwards irrorated with white; the maculae are very indistinctly marked with grey and so is the undulate line behind which there is somewhat darker irroration. Hindwing white, at the margin brownish-grey. Arizona. This form is unknown to BENJAMIN.
- subsimplex*. **O. subsimplex** Dyar (36 g) is a somewhat larger species with darker brownish grey, darker veined forewings, the black transverse lines bordered with grey and the large maculae in somewhat whitish rings, the reniform macula with a white lunula in the centre; the apex is parted by a lighter grey patch. Hindwing white with brownish veins, discal dot, and a postmedian row of dark dots. Arizona.
- gracillima*. **O. gracillima** Grt. (= *yuma* Sm.) (36 h) is a small whitish species irrorated with brown, characterized by the uncommonly narrow and long coniform macula extending from the base to the posterior transverse line and being parted by a brown streak; also the narrow long upper maculae are confluent; the posterior transverse line is only indistinctly present in the lower portion; the apex is parted by an oblique whitish patch, below it is a dark one parting the dentate white undulate line. Hindwing brownish. From California and Arizona.
- acuna*. **O. acuna** Barnes (= *adusta* Sm.) (36 h), one of the smallest species, is grey, strewn with brown, without any transverse lines or at least only the posterior line indicated by whitish irroration behind it; the coniform and ring-maculae are extremely narrow and long, often united with the grey reniform macula to which a very oblique white apical shadow extends; the light irregular undulate line is in the upper and lower portions proximally bordered with dark. Hindwing brownish. From Texas, rare.
- grandimacula*. **O. grandimacula** B. & McD. (36 h) is somewhat allied with *subsimplex*, but it lacks the white apical patch; forewing dark smoky grey strewn with whitish, with single black transverse lines, the posterior line distally in the lower half bordered with white; the large maculae filled up with light ochre-yellowish are very prominent and finely surrounded with black, of the coniform macula the lower border-line extends to the yellowish

base of the hind-margin; from the lower end of the reniform macula, on the discal and submedian folds, black rays extend to the margin. Hindwing white, at the margin grey. Arizona.

O. erratica B. & McD. (36 h) is very closely allied with the preceding, much larger, more olive-brown, *erratica*, towards the margin strewn with white, particularly in the subterminal area, whereby the distally dark-edged undulate line is better visible, behind which there is an olive-brown subanal triangle which is interrupted by a black marginal ray. Hindwing white, on the ends of the veins smoky. Texas, very rare.

53. Genus: **Leucocnemis** Hmps.

Very similar to the preceding genus from which it chiefly differs in the developed proboscis and the absence of the metathoracic tuft; the slender structure and all the rest are the same. A small number of North American species are known so far.

L. perfundis Sm. (36 h). Ground-colour yellowish-white, scantily strewn with brown, in the marginal *perfundis*, area somewhat more densely, without transverse lines, only the posterior line indicated by vein-dots; the small whitish maculae are feebly surrounded with brownish; the undulate line is entirely absent. Hindwing yellowish-white, towards the margin brownish. Texas, very rare.

L. nivalis Sm. (36 h). Body and wings white, forewing in the disc very feebly hued with grey, without *nivalis*, any markings, excepting a feeble median shadow. Described from Texas.

L. obscurella B. & McD. (36 i). Anterior body and forewing ochre-yellowish, purely only on the head *obscurella*, and thorax as well as in the marginal area and the filling of the maculae, otherwise uniformly irrorated with bluish-grey; no transverse lines at all; the veins of the marginal area are finely marked darker. Hindwing brownish-grey. Colorado, only 2 specimens known.

L. variabilis B. & McD. (36 i) is a very variable small species, on the forewing dark grey, strewn *variabilis*, with white, and in some places mixed with ochre-yellow; no transverse lines; maculae whitish, the coniform macula longer than the likewise oblong ring-macula; before the white dentate undulate line there are apical some black streaks. Hindwing light yellowish grey. The ♂♂ are mostly much lighter than the ♀♀ and often white with hardly any markings. California.

54. Genus: **Fala** Grt.

This genus exhibits a structure similar to *Oxycnemis*, but on the frons there is a large rounded projection with a raised edge and a flattened vertical listle in the centre, and a horny plate below it. The hairy thorax exhibits tufts in front and behind; all the rest as in *Oxycnemis*. But one species.

F. ptychophora Grt. (36 i). Forewing whitish, particularly on the two folds and in the marginal area *ptychophora*, irrorated with yellowish, and in some places, particularly below and behind the cell strewn with dark brown, with indistinctly double dentate transverse lines, behind the distal line with white lunulae; the white maculae are finely encircled with black, the narrow reniform macula is on the median somewhat inwardly produced; the blackish undulate line is dentate, and behind it there is a white apical streak above. Hindwing yellowish-brown. California.

55. Genus: **Oxythaphora** Dyar.

Proboscis stunted, palpi short as in the preceding; the frons shows a large projection with raised edges, but without a horny plate below it; the thorax is clad with hair and hair-like scales without tufts. On the forewing there is no accessory cell and the corresponding subcostal branches, excepting the uppermost, rise on a joint fork; on the hindwing the uppermost radial branch is forked with the subcostal. But one species.

O. delta Dyar (42 a). Head brown, frons and hindhead yellow, the latter spotted white, just like *delta*, the yellow collar, thorax grey, abdomen dark yellow. Forewing in the costal half bluish-white, below the median slate-coloured, above it through the centre of the cell extends a broad grey band being on each side bordered with black and in the cell strongly strangulated; in the marginal area black vein-streaks. Hindwing blackish, in the cell and at the base grey. Expanse of wings: 40 mm. Brazil (Natal, Rio Grande do Norte).

56. Genus: **Cephalospargeta** Mschlr.

This genus contains but one small species which, by its structure and neurulation, except the accessory cell being present, entirely resembles the much larger preceding species, but the thorax is chiefly clad with scales, without tufts, and the proboscis is well developed. The slender legs exhibit long spurs.

elongata. **C. elongata** *Mschlr.* (36 i). This little species, looking almost like a *Nola*, has the forewing yellowish-white mixed with grey, with a dark discal dot and two indistinct darker transverse lines, and a subterminal row of brown dots. Hindwing white, in the marginal area yellowish. The ♀ is strewn with darker scales behind the transverse lines. Porto Rico.

57. Genus: **Bouda** *Dyar.*

Proboscis stunted, frons without projection thorax chiefly clad with scales tuftless like the abdomen. Forewing with an accessory cell. Two small species from Mexico have been described:

pallipars. **B. pallipars** *Dyar* (42 a). Forewing grey, in the basal area broadly and conspicuously greenish-white, with black single dentate transverse lines, the two anterior ones on the submedian fold proximally dentate; at the end of the faded coniform macula a white dot, the ring-macula is likewise a white black-edged dot, the reniform macula is composed of two white dots with a black spot behind it; the undulate line is an irregular dark shadow. Hindwing dark grey. Mexico (City).

hidalgonis. **B. hidalgonis** *Dyar* (42 a) has light green forewings with similar black transverse lines as the preceding species, the anterior line is connected with the black-filled coniform macula, the ring-macula is a black dot, the reniform macula is large, irrorated with dark, with two white dots on the proximal edge; behind the irregular undulate line there are black marginal spots. Hindwing dark grey. Mexico (Hidalgo).

58. Genus: **Prothrinax** *Hmps.*

Proboscis stunted, palpi very short; frons with a long bicuspid projection and a large triangular horny plate below it. Thorax clad with scales, metathorax with a tuft turned backwards, shoulder-covers posteriorly up-turned. Neuration as in the preceding. But one species.

luteomedia. **P. luteomedia** *Sm.* (36 i). Forewing greyish-white, strewn with blackish-brown, with a yellowish tint from the base of the costal margin below the cell to the subterminal line and from there inwardly upwards obliquely to the apex; the transverse lines are quite indistinct, the anterior line is double; coniform macula surrounded with red-brown, the two upper maculae whitish, centred with brownish, reniform macula on the median inwardly produced; the whitish undulate line only commences in the middle close at the distal margin and is proximally bordered with red-brown; the apex is parted by black. Hindwing white, on the veins brownish. Arizona.

59. Genus: **Crimona** *Sm.*

Very near to *Prothrinax*, separated by the developed proboscis, with somewhat longer palpi and a semiglobular frontal projection. The tuftless thorax is covered with rough broad scales, the shoulder-covers are not bent upwards, the two first abdominal rings exhibit small thin tufts. But one species.

pallimedia. **Cr. pallimedia** *Sm.* (36 k) has yellowish-white forewings with a slight ochre-brownish admixture, at the hind-margin and distal margin greyish-white, with single rather indistinct transverse lines and a large, triangular, white and grey costal-marginal spot containing the maculae which are finely encircled with black. The light undulate line is on both sides broadly shaded with brownish. Hindwing greyish-white. California.

60. Genus: **Stilbia** *Steph.*

To this slenderly built Noctuid genus of the palaearctic region also two American representatives have been reckoned of late. As to further details cf. Vol. III, p. 204. The proboscis is present, the frons smooth, the thorax entirely clad with scales, with a loose tuft on the metathorax.

fortelloides. **St. fortelloides** *B. & McD.* (36 k) externally entirely resembles an *Oxyenemis* from which it is easily discernible by the smooth frons and the unarmed anterior tibiae. Forewing grey, in the basal area white with a blackish and yellow admixture with black transverse lines, the anterior line double, and with large grey maculae in white rings and encircled with black, also the coniform macula is present; from the reniform macula a whitish patch extends to the apex; in the uniformly grey marginal area there is the darker undulate line. Hindwing diaphanous white, at the costal and distal margins smoky grey. Arizona.

apposita. **St. apposita** *B. & McD.* (36 k) is much larger than the preceding and resembles *St. anomala* (cf. Vol. III, p. 204, pl. 42 e). Forewing dark grey, in the costal half of the median area and subterminally shaded

with blackish, submedianly irrorated with ochre-yellowish, with black double white-filled transverse lines; only the whitish reniform macula is distinct, the undulate line appears as a darker shadow in the marginal area. Hindwing yellowish smoky brown. Arizona.

61. Genus: **Copibryophila** Sm.

Proboscis developed; palpi much longer and slenderer than in the preceding genera; the frons exhibits a large rounded projection with a shovel-shaped plate at the end and a tricuspid horny plate below it; the thorax being covered with scales exhibits behind a large round tuft. Abdomen tuftless. But one species.

C. angelica Sm. (36 k). The whitish forewing is strewn with brown and in the discal area irrorated *angelica*. with brown, the transverse lines on the averted sides bordered with white, the posterior line below the cell deposited and far inwardly removed; between the whitish maculae there is a black spot in the cell; the light undulate line is proximally irrorated with dark, behind it apically dark irroration. Hindwing light brown with white fringe. California.

62. Genus: **Prodicella** Hmps.

Scarcely different from the preceding genus, the horny plate below the similar frontal projection is triangular, the palpi are much shorter and not so slender. But one species.

P. darena Drc. (36 i). The yellowish-white forewing is irrorated with red-brown, in the discal and *darena*. marginal areas darker, with dark brown transverse lines being somewhat bordered with whitish; between and before the small whitish-ringed maculae on the discal fold with a black streak; undulate line indistinctly lighter. Hindwing white, at the margin brownish. Mexico.

63. Genus: **Escaria** Grt.

Separated from the preceding genera by the stunted proboscis, still shorter porrect palpi and a long cordiform frontal projection with a horny plate below it; the smoothly scaled thorax and the abdomen are without tufts. Only two species.

E. clauda Grt. (36 k). Forewing ochre-yellowish, strewn with red-brown and blackish, with blackish *clauda*. transverse lines being bordered with ochre-yellowish on the averted sides, the ochre-yellowish maculae surrounded with black; the light undulate line is proximally shaded with red-brown. Hindwing yellowish-brown. Arizona. — **pallens** B. & Benj. (36 k) is a much lighter south-western race of a yellowish-white ground- *pallens*. colour with a quite extinct marking. From Lower California.

E. homogena McD. has an ochre-yellowish body, and the forewing is olive-brown mixed with whitish, *homogena*. in some places more greyish-brown particularly behind the cell and in the marginal area; the transverse lines are whitish, the posterior line encircling the reniform macula in a large curve, and between both filled up with blackish; the ring-macula is a white oval surrounded with black, below it there is an extensive quadrangular white area; the undulate line is strongly dentate with a distinct W. Hindwing smoky-grey. (Canada (Alberta). Probably only an intensely marked form of *clauda*, in contrast with *pallens* irrorated with blackish, based upon a single ♀.

64. Genus: **Aleptina** Dyar.

Proboscis somewhat better developed and palpus slightly longer and slenderer than in the preceding genus, extending to the large flattened horny projection of the frons, with an above concave horny plate below it. On the hindwing the upper median branch and the lowest radial branch are forked. Otherwise entirely as in *Escaria*.

A. inca Dyar (37 a) is a small species very closely allied with the *Oxyenemis*, the forewing grey *inca*. mixed with black and white, with double transverse lines, the maculae surrounded with whitish, to the reniform macula a white apical patch extends, below it the subterminal area is darkened, the marginal area being lighter again. Hindwing white with brownish veins and margin. Arizona to Mexico. — The form **texana** B. & McD. *texana*. (36 k), from Texas, is lighter than the type, more uniformly suffused with a bluish grey, and less contrasting, particularly by the entire absence of the yellowish part in the basal area, only the light apical patch being prominent; single specimens from Mexico entirely correspond with it.

65 Genus: **Prorachia** Hmps.

This genus likewise contains but one little species closely allied with the preceding; it differs in the rounded frontal projection with a transverse listle in the centre and a horny plate below it, and in a reverted tuft on the metathorax.

- daria*. **P. daria** Drc. (37 a). Forewing grey mixed with reddish-brown, with double transverse lines filled up with whitish-grey, the anterior line proximally bordered with white; no maculae except the centrally strangulated light ring of the reniform macula; the indistinct grey undulate line is proximally irrorated with brown.
- darioides*. Hindwing light brown, on the veins and margin darker. A variable insect. — In the form **darioides** Strd. (= ab. 1. *Hmps.*) the reniform macula is more distinctly white, in **dariella** Strd. (= ab. 2. *Hmps.*) (37 a) there are small black spots before and behind the reniform macula. Arizona to Mexico.

66. Genus: **Hadenella** Grt.

Proboscis well developed; the frons exhibits a large horny projection with a raised edge, in the middle of which there is a central, anteriorly concave, conical appendage, and below the whole there is a horny plate. The metathorax of the sealed anterior body exhibits a loose tuft, and so does the first abdominal ring. All the rest is the same, except the subcostal branch being forked with the uppermost radial branch. But one species:

- pergentilis*. **H. pergentilis** Grt. (37 a). Forewing whitish, strewn with brownish grey, with an ochre-yellowish tint except on the costal-marginal portion, the veins finely striped black, with indistinct finely crenulate transverse lines, the maculae in whitish rings and encircled with black, also the long coniform macula is present; the whitish undulate line is proximally bordered with red-brown and exhibits in front of it at the costal margin a dark spot. Hindwing light yellowish brown. Washington to Colorado.

67. Genus: **Fotella** Grt.

Of a more slender structure than *Hadenella*, with broader wings; the frontal projection is simply rounded, and below it there is a horny plate. Veins of hindwing not forked.

- cylindrica*. **F. cylindrica** Grt. (37 a). Forewing on the greyish-white ground densely irrorated with dark brown, with finely black-striped veins, rather indistinct double transverse lines, the posterior of which is finely dentate, the maculae in whitish rings are finely surrounded with black; the whitish undulate line is proximally bordered with red-brown. Hindwing light yellowish with a bent postmedian line. From Nevada.
- notalis*. **F. notalis** Grt. (37 b) is larger than the preceding, dark brownish-black with an olive tint and a narrow lighter marginal band; no transverse lines whatever, only the whitish, centrally strangulated reniform macula is visible. Hindwing light brownish, at the margin darker greyish-brown. Arizona.
- olivia*. **F. olivia** B. & McD. (37 a) has dark greyish-brown forewings coarsely strewn with ochre-yellowish; the transverse lines are only indicated by dark costal-marginal spots at their beginnings, only occasionally the posterior line is indicated in its course by a row of dots, and the maculae are small faded whitish spots; the narrow marginal area is of a contrasting lighter yellowish colour. Hindwing whitish, at the margin feebly smoked. California.
- fragosa*. **F. fragosa** Grt. (= *cervoides* B. & McD.) (37 b) is allied to *olivia*, smaller, more uniformly brown, with small maculae encircled by white, the reniform macula strangulated and above open, with a darker nebulous line behind it, indicating the approximate course of the posterior transverse line which is besides only marked at the costal margin by a black spot; the marginal area is not lighter, before the black marginal dots there are small whitish spots, the lowest of which is parted by a black streak. Hindwing smoky grey with whitish fringes. Arizona.

68. Genus: **Catabena** Wkr.

Proboscis well developed; the erect palpus exhibits a short porrect terminal joint; frons smooth without projection. The collar is raised in a somewhat keel-shaped or hooded way, the pro- and metathorax exhibit loose tufts, the abdomen one at the base; the thorax is besides only clad with scales.

- lineolata*. **C. lineolata** Wkr. (= *petraea* Wkr., *miscellus* Grt.) (37 b) has whitish forewings with black-striped veins and folds, the lower half of the cell and the distal half of the wing are striped reddish-brown; the transverse lines are only distinct at the costal margin, the course of the posterior line is indicated by vein-dots and distally bordered with white; of the maculae only the narrow long white ring-macula surrounded with black is present, of the undulate line only dentate white traces are visible. Hindwing diaphanous white with brown veins in the marginal area. Canada to California. — The larva is slender, green, watered with brown, with rather broad whitish longitudinal lines. It lives on *Solidago*.
- sagittata*. **C. sagittata** B. & McD. (37 b) is allied to *lineolata*, but darker grey, the reniform macula indicated by a light oval spot at the cell-end, below it there is somewhat darker shading with a whitish spot below it,

in the marginal area there are long black sagittary streaks between the veins. The ♀ is still darker bluish-grey, the hindwing is more broadly smoky at the margin. California.

C. pronuba *B. & McD.* (= *nanuscula* *Dyar*) (37 b) likewise greatly resembles *sagittata* from which it is *pronuba*, at once discernible by entirely white hindwings; the forewing is longer and narrower, dark grey, the marking rather indistinct; the reniform macula is a small narrow dark luna; the apex is parted by a darker diffuse spot. New Mexico.

C. vitrina *Wkr.* (= *terminella* *Grt.*, *candida* *Sm.*, *divisa* *H.-Schäff.*) (37 b) is somewhat larger, the *vitrina*, whitish forewing is irrorated with yellowish brownish-grey, in the marginal area suffused with brown; no maculae, the transverse lines indicated by costal-marginal streaks, the course of the posterior line by vein-dots; behind the white undulate line there are black internerval streaks. The ♀ exhibits a strong black streak along the median as far as the undulate line. Hindwing diaphanous white, at the margin smoky. Texas, Arizona, and Mexico, and in many West Indian islands (Bahamas, Cuba, Hayti, Grenada). — The insular form **bahamensis** *bahamensis*, *Strd.* (= ab. 1. *Hmps.*) is more bluish-grey without any brown in the marginal area. Bahamas and Cuba.

C. esula *Drc.* (37 c) is larger, stronger, with broader wings, and darker than the preceding, brown *esula*, mixed with greyish-white, on the veins and folds black-striped, with long erenulate transverse lines, the posterior line distally bordered with white. Hindwing whitish, on the veins and margin brownish. Widely distributed and common from Texas to Panama and in Grenada.

C. terens *Wkr.* (37 c) has narrower wings than the preceding, of a greyish-white colour irrorated *terens*, with blackish-brown, with darker striped veins; the anterior transverse line is composed of black internerval streaks, the posterior line of a row of vein-dots; no ring-macula, the reniform macula is a minute whitish spot. Hindwing as in *esula*. Venezuela to Peru and Paraguay.

69. Genus: **Prodenia** *Gn.*

Rather large, slender species with narrow long wings of very homogeneous markings and colourings, with a number of species being well-known as vermins. Proboscis well developed, frons smooth, the moderately long erect palpus extending to the middle of the frons. The scaled thorax exhibits a parted tuft only behind, the abdomen is tufted on the first rings. Cf. also Vol. III, p. 206.

P. rubrifusa *Hmps.* (37 d) has bright red-brown, blackish-strewn, in the basal area yellowish forewings, *rubrifusa*, yellowish are also a costal-marginal spot behind the anterior transverse line and in the hindmarginal half of the postmedian area and an oblong spot above the coniform macula; the other markings as in the other species. Hindwing diaphanous white, at the apex somewhat brownish. From Jamaica.

P. dolichos *F.* (= *commelinae* *Sm. & Abb.*) (37 d) has a paler brownish forewing, being yellowish *dolichos*, in the hindmarginal part of the median area up to the submedian fold, with double transverse lines filled up with whitish, the reniform macula being distally above the longest extended of all the species; to the centre of the posterior transverse line runs a light apical patch, turning red-brown right before it. Most widely distributed from the United States to Brazil and Argentina. — The brown larva has yellowish-white subdorsal lines with black wedge-shaped spots above them, and a black lateral spot on the 5th ring.

P. pulchella *H.-Schäff.* (= *exquisita* *Mschlr.*) (37 d) is a smaller species with a more blackish-brown *pulchella*, forewing, distinguished by a white arcuate streak above the centre of the hind-margin and silvery grey irroration at the hind-margin before the anterior transverse line; this line and the posterior line are double, filled up with yellowish; the apex is parted by a violettish-white apical patch. Honduras, Jamaica, and Cuba.

P. androgea *Cr.* (= *marmorea* *Sepp.*). A very large species, reddish-brown, darker irrorated and *androgea*, black-strewn, with an oblique bluish-white spot from the apex to the posterior transverse line, turning violet right before it; from the oblique yellow ring-macula a long white splintered spot extends to the subterminal line at the submedian fold, whereby it is easily discernible from the other similar species. The diaphanous white hindwing is somewhat brownish irrorated at the apex and margin. Panama to Brazil, besides in Sa. Lueia and Trinidad.

P. latifascia *Wkr.* (= *variolosa* *Wkr.*, *cosmioides* *Wkr.*, *commelinae* *Drc.*) (37 c) is the most extensively *latifascia*, yellow species, in the basal area whitish with a little greyish-brown behind it, behind the postmedian line bluish white with a red-brown costal spot. The ♀ is browner in the discal area, only at the hind-margin yellow, with a white-striped median and its branches, the maculae better marked, and a darker postmedian area. Mexico to Argentina and Paraguay, also in the Southern United States.

ornithogalli.

P. ornithogalli Gn. (= *lineatella* Harv.) (37 d) is one of the most common and most noxious species with predominantly greyish-brown forewings, only in the discal area below the cell tinted yellowish-reddish, with a white-striped median and its branches, before the anterior transverse line irrorated with lead-colour; a bluish-white apical patch extends to the posterior transverse line, also above the anal angle there is a large bluish-white spot. The ♀ is quite brownish-grey without the yellow tint above the centre of the hind-margin, with more intensely white striped veins and reduced white at the apex and anal angle. United States to Costa Rica. — The larva is very similar to that of *dolichos* and lives on all kinds of cultivated plants. — In the form **eudiopta** Gn. (= *flavimedia* Harv., *commelinae* Riley) (37 d) the ochre-yellow colour is more prominent in the hindmarginal half of the median area. But there are all kinds of transitions, so that the form cannot be distinctly defined.

culdiopla.

eudiopta *Gn.* (= *flavimedia* *Harv.*, *commelinae* *Riley*) (37 d) the ochre-yellow colour is more prominent in the hindmarginal half of the median area. But there are all kinds of transitions, so that the form cannot be distinctly defined.

præfica.

P. praefica *Grt.* (37 c) is extraordinarily similar to the preceding, and it is not impossible that it represents this species on the Pacific coast in California, all the more since the genital differences are quite insignificant (the „clasper“ is about a quarter longer than in *ornithogalli*). The insect is of the same size and marking, but the colour is a duller less contrasting brown, the lilac white apical patch is very much feebler

*eudiop-
toides.*

and narrower. — **eudioptoides** B. & McD. (37 e) is a form corresponding to the form *eudiopta* of the preceding species, with a more yellow hindmarginal half of the median area.

marina.

P. marima Schs. (37 e) is smaller than the preceding species are. greyish brown without any yellow tints with an intensely white-striped median and its branches, the double transverse lines filled up with whitish; the bluish-white apical patch being present in all the other species is entirely absent here. Hindwing diaphanous purely white. Described from Brazil.

70. Genus: **Spodoptera** Gn.

Extraordinarily near to the preceding genus and chiefly distinguished by the presence of a tuft also on the prothorax and of but one tuft on the first abdominal ring. To this chiefly oriental and African genus belong also two South American species.

compta.

S. compta *Wkr.* (37e). Forewing ochre-yellowish, irrorated with red-brown and strewn with a darker brown, in the marginal area suffused with blackish-brown, with light veins; transverse lines rather indistinct, bordered with whitish, the maculae are quite extinct darker small punctiform spots; the undulate line is whitish, proximally bordered with a darker colour. Hindwing of a pure white, diaphanous. Peru.

cranida.

S. evanida Schs. (42 b). Forewing dull greyish-brown, in the basal area and postmedianly shaded darker; the irregular transverse lines are finely blackish-brown; in the lighter median area the yellowish ring-macula is feebly surrounded with brown, the reniform macula is at the cell-end hardly indicated, the fine light undulate line inwardly shaded by a darker colour. Hindwing white. Expanse of wings: 30 mm. Described from Cayenne.

71. Genus: **Laphygma** *Gn.*

Likewise very closely allied to the preceding genera and separated by the absence of the tuft on the prothorax, only a loose one on the metathorax and a tuft on the first abdominal ring. All the rest is quite the same.

frugiperda.

L. frugiperda *Abb. & Sm.* (= *macra Gn.*, *inepta Wkr.*, *signifera Wkr.*, *plagiata Wkr.*, *autumnalis Riley*, *flavimaculata Drc.*) (37 e) is a universally distributed vermin from Canada to Paraguay and Argentina, with ochre-whitish forewings strewn with reddish-brown, with a somewhat lighter proximal area, with a black basal area and indistinctly double transverse lines, and whitish maculae being finely surrounded with black. At the lower cell-end the veins are finely marked with white; the apex is parted by a faded whitish patch. Hindwing diaphanous white, at the apex brownish. The ♀ is considerably darker blackish-brown, in the costal-marginal portion irrorated with grey, the maculae more distinctly encircled with white. — The form **fulvosa** *Riley* (37 e) is a more purple reddish form with an entirely faded apical patch. — **obscura** *Riley* (37 e) is a form being very much darkened also in the male sex. — The larva is brownish-grey, on the dorsum almost whitish, with a broad light lateral band suffused by reddish. It lives polyphagously also on all kinds of useful plants.

fulvosa.

obscura.

Riley (37 e) is a more purple reddish form with an entirely faded apical patch. — **obscura** *Riley* (37 e) is a form being very much darkened also in the male sex. — The larva is brownish-grey, on the dorsum almost whitish, with a broad light lateral band suffused by reddish. It lives polyphagously also on all kinds of useful plants.

exigua.

L. exigua *Hbn.* (= *flavimaculata* *Harv.*) (37 f) has been dealt with at large in the palearctic part (cf. Vol. III, p. 207, pl. 48 a); it is marked as the preceding, of a somewhat lighter grey colour, well characterized by the yellowish-red ring-macula. Distributed from the United States to Mexico. — The larva is reddish-brown with a light yellowish lateral stripe, and often does great harm to all kinds of plantations.

nigrescens.

L. nigrescens *Dyar* (37 f) is much smaller than the two preceding, with a loam-coloured grey, black-dusted forewing, in the basal area filled up quite black and also in the upper half of the median area; the maculae

are lighter, but not encircled and darker centred; subapically a quadrangular black spot; excepting the blackish undulate line, all the transverse lines are absent; hindwing of a pure white. Mexico (Tehuacan). — In contrast with this apparently rather invariable species, I discovered among the lepidoptera collected by *Purpus* in Mexico in the Berlin Museum numerous very variable specimens in which the median area was sometimes unicoloured ferruginous-yellow: **fulvimedia** *form. nov.* (37 f), and sometimes of a pure white: **albimedia** *form. nov.*, *fulvimedia*, *albimedia*, from the district of S. Luis Potosi (Rascon). I do not dare to decide whether they belong to another species.

72. Genus: **Stauiropides** *Hmps.*

This genus contains 2 large very closely allied beautiful Noctuids distinguished by short straightly porrect palpi, a stunted conical projection with a raised edge on the frons and a horny plate below it; the male antennae are bipectinate, the scaled thorax exhibits a twice keeled tuft, the abdomen is tufted on the first rings.

S. superba *Drc.* (37 g). With its light bluish-green colour and the red-brown median part as far as *superba*, the distal margin it is only mistakable with the following species from which it differs in the absence of the black hindmarginal streak at the base, in the grey reniform macula being on both sides surrounded with black with a produced lower end and extinct upper end, the somewhat more distinctly marked postmedian and undulate lines, the former with a black connecting streak to the fragment of the anterior transverse line; besides the antennae of the ♀ are likewise combed, the hindwing shows a darker undulate marginal line. Ecuador, Peru.

S. persimilis *Hmps.* (= *superba* *Drc.* part.) (37 g). The differences of this species being extremely *persimilis*, similar to the preceding have been pointed out above; the reniform macula is here reddish-brown, only proximally marked black, distally not at all, above the hind-margin near the base there is an oblique fine black streak; the female antennae are plain, not pectinate, the hindwing is diaphanous white, at the margin slightly strewn with reddish-brown. Costa Rica and Trinidad.

73. Genus: **Xylomyges** *Gn.*

Extraordinarily near to the genus *Prodenia* from which it only differs in a small horny plate below the frons and a somewhat differently shaped, more double keel-shaped dorsal tuft extending to the prothorax.

X. eridania *Cr.* part. (= *externa* *Wkr.*, *nigrofascia* *Hulst*) (37 f) has caused some confusion, for *eridania*. GUENÉE has denominated the aberrative form with a black band as *eridania*, whilst for the normal form he has chosen the name *phytolaccae*. An extremely common, well-known and wide-spread insect of a yellowish-grey ground-colour with black-striped veins and only traces of transverse lines, the posterior of which is double, filled up and distally bordered with whitish; the reniform macula is a minute grey spot with 3 black dots in it. Hindwing diaphanous white; in the rare nomenclatural form a broad black stripe extends from the reniform macula to the distal margin, whilst it is absent in the normal form: **linea** *F.* (= *eridania* *Cr.*, *phytolaccae* *linea*. *Abb. & Sm.*, *derupta* *Morr.*, *putrida* *Gn.*, *amygia* *Gn.*, *inquieta* *Wkr.*, *bipunctata* *Wkr.*, *strigifera* *Wkr.*, *ignobilis* *Btlr.*, *recondita* *Mschlr.*, *orbicularis* *Drc.*) (37 f). From Florida and Texas to Paraguay and Argentina. — The larva is dark grey, strewn with yellowish, marked very similarly to the larvae of *Prodenia* owing to the dark lateral spot on the 5th ring and the row of black spots above the broad reddish subdorsal lines. It lives on various low plants.

X. peruviana *Wkr.* (= *communicata* *Wkr.*) (37 f) is of a much more monotonous and more ochre-*peruviana*, yellow colour, feebly irrorated with reddish-brown, the black dots being absent in the reniform macula which is only on the inner side somewhat marked with black; the posterior transverse line is quite extinct and only indicated by a few vein-dots. Hindwing white. Peru.

X. ochrea *Hmps.* (37 g) is coloured very similarly to the preceding, at the base of the hind-margin, *ochrea*, in the cell-end and above it more whitish; the transverse lines are almost entirely absent, only the posterior line is indicated by some vein-dots, the undulate line is very feebly marked by whitish. Peru.

X. sunia *Gn.* (= *albula* *Wkr.*, *caudata* *Wkr.*) (37 g) has the ground-colour similar to *eridania*, but *sunia*, narrower wings and a very distinct, in the lower parts dentate undulate line. The colour is a paler more bluish grey, only in the disc slightly tinted yellowish-white, with a very distinct fine black basal ray. — **orbicularis** *orbicularis*, *Wkr.* (37 g) has instead of the reniform macula a round black spot. From Mexico to Argentina, and in the West Indies.

74. Genus: **Lophomyra** Schs.

This genus has a very smooth frons and a rather short, feebly developed proboscis; palpus longer than in the preceding genus, pro- and metathorax of the scaled thorax exhibit loose tufts, the abdomen being tufted on the first rings, the tibiae clad with long hairs and scales. But one species:

lucila. **L. tacita** Schs. (42 b). Forewing in the basal third of the costal margin lilac, at the base strewn with black, in the median area light brown, in the distal half whitish, strewn with yellowish-green, in the centre of the cell and below it shaded with lilac, below the cell-end greenish-yellow, bordered with red-brown, the end of the median white; transverse lines blackish-brown, the posterior line dentate and on the ends of the veins dotted, distally bordered with white, proximally shaded with lilac; the middle radial branch is black-striped, above it the undulate line is brownish-grey, below it shaded with yellowish-green, the margin behind it whitish. Hindwing lilac brown. Expanse of wings: 31 mm. Costa Rica.

75. Genus: **Acroria** Wkr.

Of the same structure as *Xylomyges*, but the frons is quite smooth, without a horny plate, and almost bare, without any scales. 4 tropical species have been described.

terens. **A. terens** Wkr. (= *infensa* Wkr., *villipes* Wkr., *pulchra* Mschlr., *niphanda* Drc.) (37 h). Forewing on the red-brown ground irrorated with dark, with black-striped veins, indistinctly double transverse lines, the maculae surrounded with black, with 2 light greenish dots outside at the reniform macula; from the coniform macula a black streak extends to the postmedian line, the undulate line is somewhat lighter. Hindwing of a pure white with brownish veins. Mexico to Brazil.

denterna. **A. denterna** Gn. (37 h) is the largest of 3 very similar species with ochre-yellowish forewings, at the hind-margin being dark brown; the transverse lines are only indicated by double streaks at the costal margin, the posterior line besides by vein-dots, in the brown hindmarginal portion it is distally bordered with white; the maculae are in lighter rings. In this species the ♂ forewing beneath is thickly covered with modified brown scales. Brazil to Paraguay.

mexicana. **A. mexicana** Hmps. (= *denterna* Drc.) (37 h) is smaller and nater than the preceding, in the ♂ without the brown scales on the forewing beneath, of a lighter yellowish than *denterna*, the maculae only indicated as small light spots; the white undulate line is only visible in the anal portion and distally bordered with a scarcely darker colour. Mexico.

diminuta. **A. diminuta** Gn. (= *rotundata* Wkr., *lignigera* Wkr., *denterna* Drc.) (37 h) is the smallest of the 3 species, the most distinctly marked, the reniform macula well expressed, quadrangular, the ring-macula entirely absent, above it an oblique brown costal-marginal streak; the white undulate line which is visible in the anal portion is on both sides intensely bordered with dark brown. Apex and proximal angle are rounder than in the preceding. Widely distributed from Mexico to Brazil.

76. Genus: **Acroriodes** Hmps.

Separated from the preceding genus by the thorax being clad with hair and hair-like scales, the prothorax showing a long loose tuft, the mesothorax small double tufts, and the metathorax a large rounded tuft; the abdomen exhibits quite a number of tufts, the one situate at the base being particularly large and double. But one species:

diptolophpha. **A. diptolophpha** Drc. (37 h). Forewing as far as the posterior transverse line deep red-brown with lighter veins, in the distal third greyish-yellowish, at the costal margin obliquely to the apex darkened by blackish, with very pointedly dentate transverse lines filled up with yellowish, the reniform macula in a yellowish-white ring. Hindwing yellowish-white, distally broad blackish-brown. A very variable species: The form **diptolophphella** Strd. (= ab. 1. Hmps.) has the head, thorax, and the basal half of the forewing ochre-yellowish. — **diptolophphana** Strd. (= ab. 2. Hmps.) has the median on both sides bordered with black and a black connecting streak between the transverse lines. — **diptolophphodes** Strd. (= ab. 3. Hmps.). Here the forewing is suffused with black as far as the undulate line, only the costal-marginal area remaining yellowish, the hindmarginal area reddish-brown. Peru.

77. Genus: **Thyatiroides** Hbn.

The frons here exhibits a rounded projection in the centre of which there is a short elliptic horny appendage with a raised edge and a horny plate underneath; the last palpal joint is porrect. The thorax is clad with hair and scales and midway exhibits a broad comb of erect scales. The abdomen is roughly haired at the base, but tuftless. But one species:

Th. godalma Schs. (37 h) is a beautiful, unmistakable species. The whitish forewing is deep brown *godalma* in the basal and marginal areas, in the median area there are 2 large pinkish-brownish confluent spots, in the spotted marginal area there is a white notched undulate line. The maculae are surrounded with whitish. Hindwing light brown. Mexico.

78. Genus: **Strigiphlebia** Hmps.

The only species described somewhat recalls the yellow species of *Stiria*; frons smooth, thorax clad with hair intermixed with scales, in front and behind with loose tufts, abdomen tuftless.

S. flavirena Hmps. (37 g). Forewing light reddish ochre-yellow, the costal-marginal area of a purer *flavirena*. yellow, scantily strewn with black and with a narrow deep red-brown margin; the end of the median vein and a part of its branches are white, beneath brown-striped; the transverse lines are only indicated by vein-dots, except at the costal margin; ring-macula absent, reniform macula yellow, partly surrounded by a bright red-brown, and from it a red-brown stripe extends to the margin. Hindwing yellowish white, on the veins and margin brownish. Peru.

79. Genus: **Athetis** Hbn.

This genus being better known as *Caradrina* contains some representatives also in the northern parts of America, exhibiting their characteristic exterior also in the New World. They are distinguished by a smooth frons, the thorax being clad with hair and hair-like scales, with but one tuft on the prothorax, whilst the metathorax and abdomen are tuftless. Cf. also Vol. III, p. 207, and Vol. XI, p. 324.

A. triquetra Grt. (37 i). Forewing greyish-brown with indistinctly double transverse lines filled up *triquetra*. with grey, large dark maculae in white rings; before the light undulate line there are at the costal margin and close below it 3 minute black triangular spots by which the species is easily recognized. Hindwing whitish, at the margin brownish. Arizona and Mexico.

A. indigena B. & Benj. (37 i). Allied with *triquetra*, but the black triangular spot is smaller, without *indigena*. the costal portion; the reniform macula is parted by a dark median shadow with 4 yellowish dots. Base of collar black. On the whole the structure of *indigena* is stronger. Arizona.

A. multifera Wkr. (= fidicularia Morr.) (37 i) has light grey, black-strewn forewings with single *multifera*. crenulate black transverse lines; the ring-macula is punctiform, the reniform macula a small black lunula bordered with white dots; before the whitish undulate line there are small red-brown sagittiform spots. Hindwing whitish, on the veins and margin brownish. Canada to New York, Illinois, and Minnesota.

A. extima Wkr. (= civica Grt.) (37 i) is somewhat similar to *multifera*, on the whitish ground strewn *extima*. with a more brownish colour; the ring-macula is more ring-shaped, the posterior transverse line more strongly dentate, the marginal area more darkened, and the undulate line nearer to the margin. Hindwing more purely white, only at the margin narrowly hued with brownish. Canada to Colorado and California. — The brownish larva with a broad lighter dorsal stripe lives in daytime hidden on low plants.

A. meralis Morr. (= bilunata Grt.) (37 i) is a species but little marked, reddish-grey, strewn with *meralis*. black, with very indistinct transverse lines filled up with a lighter grey, the ring-macula being absent, the reniform macula being a small blackish lunula; undulate line scarcely indicated. Hindwing white, on the veins and margin feebly brownish. Canada, Northern and Eastern States.

A. mona B. & McD. (37 i) somewhat recalls the European *selini* (Vol. III, pl. 45 a). Forewing *mona*. uniformly greyish-brown, strewn with black, with fine interrupted dentate transverse lines and a faint median shadow; the ring-macula is a dark dot, the reniform macula is large, distally bordered with yellow, with white dots, darker centred; behind the yellowish undulate line the marginal area is darkened. Hindwing white, distally broadly darkened. California.

A. tarda Gn. (= prima Sm.) (37 k). Forewing lustrous light red-brown, irrorated with grey, with a *tarda*. darkened marginal area, with blackish transverse lines, the posterior line dentate with vein-dots and an indistinct median line, the maculae being only strigiform or punctiform; the whitish undulate line is proximally irrorated with dark brown. Hindwing greyish-brown. Washington to Florida. — The larva is dark brown with a narrow white dorsal line, with brown triangular spots on the posterior segmental edge and oblique dark subdorsal streaks as well as a broad light lateral band with dark spots below it. It lives on low plants.

A. minuscula B. & McD. (37 k) in the colouring and size resembles *mona*; the forewing is uniformly *minuscula*. purple grey, all the markings are indistinct, the anterior transverse line only indicated at the costal margin and by single dots, the posterior line by a double row of dots; the ring-macula is composed of two dots which

are connected by a U-shaped line, the reniform macula is larger, surrounded with dark, with single white dots which are frequently centred with blackish. Hindwing diaphanous white, at the margin smoky. Texas.

atrostriga.

A. atrostriga B. & McD. (37 k). Forewing lighter purple grey, at the margin darkened with brownish, the transverse lines are only at the costal margin indicated as small black spots; by the black ring-macula being arrowhead-shaped and connected with the base by an interrupted line the species is easily discernible; the reniform macula is narrow, surrounded with black, the undulate line is ochre-yellow, proximad particularly behind the cell shaded with dark brown. Hindwing white, distally smoky brown. Utah.

poliophaea.

A. poliophaea Hmps. is the only really tropical species of this genus: forewing greyish-brown, in the marginal area excepting the apex copper-brown, in the costal-marginal part strewn with white, with quite indistinct transverse lines, the posterior line being finely dentate and with a bent blackish median line; no maculae; instead of the undulate line there are only 2 minute white spots below the costal margin. Hindwing blackish-brown. West Colombia.

80. Genus: **Nacopa** B. u. Benj.

The only species was described as *Acopa*, but differs from it in the stronger structure with a much shorter abdomen and a differently shaped frontal projection in which the part towards the vertex protrudes much more. Tibiae with very long hair.

bistrigata.

N. bistrigata B. & McD. (37 k). Forewing light brown, in the basal area darker, with a broad white anterior transverse line, and a similar posterior line in which there is a thick white discal streak, with a large brown subapical spot, behind it a white apical line. Hindwing pinkish-brown. Arizona.

81. Genus: **Acopa** Harv.

Proboscis absent, the short palpi are straightly porrect, rough-haired, the frons exhibits a rounded projection which is upwards flattened. ♂ antennae serrate and ciliated; thorax clad with rough scales and loose tufts, the posterior tuft very large. Abdomen tuftless. Slenderly built species recalling diurnal *Heliothidae*.

carina.

A. carina Harv. (37 k) is an extremely variable species looking very differently in both sexes. The white forewing is densely irrorated with blackish-brown, particularly in the median area which is edged with dentate transverse lines being on the averted sides bordered with white; the maculae are only marked by an indistinctly darker colour; the undulate line is a faded dark brown band. Hindwing greyish-brown. The ♀ is much lighter, white and yellowish-brown, otherwise similarly marked. Texas.

perpallida.

A. perpallida Grt. (= *incana* Edw., *carina* auct. nec Harv., *borealis* Dyar) (37 l) is so variable that there are hardly two specimens alike. Forewing white, in the lower part of the basal and median areas irrorated with brownish ochreous, with yellowish-brown notched transverse lines and an indistinct reniform macula, the other maculae being absent; the undulate line is a faded brown band. Hindwing white, at the margin feebly brownish. — The form **dentifer** Dyar (37 l) is a form with darker irroration, approximating *carina*, with a more intense marking. — **pura** B. & Linds., in contrast with it, are quite light, white specimens with black conspicuous transverse lines, the reniform macula being reduced to a black dot. Kansas, Colorado, Arizona.

82. Genus: **Langona** B. u. Linds.

The most closely allied to the preceding genus from which it differs in the smooth frons without a projection, the thorax being almost only clad with scales except but very few interspersed hairs; the few specimens that were hitherto captured are too much damaged as to allow the assertion that the pro- and metathorax are tuftless; the metathorax exhibits a large tuft of long spatulate scales; abdomen tuftless. The ♂ antennae exhibit double ciliated peetinations. But one species.

griseszens.

L. griseszens B. & Linds. (37 l). Forewing grey strewn with black and white scales in the costal half and at the apex, with black transverse lines, the posterior line towards the hind-margin distally much lighter, above it is darkened by an oblique dark subapical shadow; maculae indicated by a very feebly lighter colour, the ring-macula surrounded with a darker colour; subterminal area dusty grey. Hindwing brownish-grey. Arizona.

83. Genus: **Platyperigea** Sm.

The genus is about the same as the palearctic genus *Petilampra* (Vol. III, p. 215); without a proboscis, with short porrect palpi, a smooth frons, the tuftless thorax clad with rough hair intermixed with hair-like

scales; the abdomen is tuftless, too. Small, slim Noetuids with broad wings which in the ♀ are usually more or less stunted.

P. anotha Dyar (37 l). Forewing lustrous ochreous grey, strewn with a dark colour, with blackish-*anotha*. brown transverse lines, the posterior line being dentate and distally lighter; the maculae are small faded spots, the marginal area is darkened by a brownish grey, being the darkest at the anal angle, with the slightly lighter undulate line in it. Hindwing diaphanous whitish, in the marginal half brownish. British Columbia.

P. camina Sm. (37 l) is much darker blackish-brown, the ring-macula is a short longitudinal streak, *camina*. the posterior transverse line is quite indistinct and faded, the median shadow and undulate line are absent. Hindwing yellowish-brown, with a feeble discal luna. Colorado.

84. Genus: **Dysmilichia** Speiser.

Separated from the preceding genera by the developed proboscis, the conical frontal projection with a raised edge and a horny plate below it, the scaled thorax being tuftless, the tuftless abdomen and the raised short palpi. The structure is likewise slender, the wings of the only Brazilian species rather narrow, in the other representatives broader. Cf. Vol. III, p. 215.

D. perigeta Schs. (37 l) has purple reddish-brown forewings, the transverse lines on the averted sides *perigeta*. marked with white, the maculae in white rings and finely encircled with black, in the strangulated reniform macula there is a yellowish centre; the white undulate line is proximally shaded with brown. Hindwing reddish greyish-brown. Brazil (São Paulo).

85. Genus: **Hypermilichia** Hmps.

Distinguished from the preceding genus merely by the absence of the horny plate below the longer stunted conical horny appendage with a raised edge on the apex of it; on the forewing the accessory cell seems to be absent. But 1 species:

H. colon Dgn. Forewing grey, scantily strewn with brown; the anterior angular transverse line is *colon*. brown, towards the base bordered with white; a broad brown median band forming a very strong angle behind the cell-end is proximally indistinctly, distally distinctly defined and bordered with a reddish brown; on the cross-vein there is a fine white streak, a marginal line is also white. Hindwing reddish-brown. Expanse of wings: 19 mm. Argentina.

86. Genus: **Anthodes** Hmps.

The only species described has longer palpi than the preceding genera, a smooth frons with a thick tuft of scales with a listle of scales above it; the scaled thorax exhibits in front a flattened tuft, on the metathorax a large loose tuft, the abdomen also shows a series of tufts which are very large on the 2nd and 3rd rings. The ♂ exhibits on the uppermost radial branch of the hindwing at the end a wedge-shaped androconium.

A. acynodonta Dgn. Forewing light salmon-coloured, the transverse lines marked by dark brown *acynodonta*. scales, in the posterior line in a double row, the maculae are surrounded by yellow or white, the quadrangular ring-macula is open above and rests on the median, below it there is a brown spot, behind which there is a white streak at the hind-margin, above and below bordered with brown, the reniform macula is strangulated; before the row of black marginal lunae proximally pupilled with ochre-yellow there are small white wedge-shaped spots. Hindwing blackish. Uruguay.

87. Genus: **Proxenus** H.-Schüff.

This chiefly palearctic genus also contains a few American representatives; cf. Vol. III, p. 215. Slender species without tufts on the scaled body, with a well developed proboscis and smooth frons, with narrow and long wings.

P. miranda Grt. (38 a). Forewing lustrous blackish-brown, strewn with grey, with very faint traces *miranda*. of transverse lines, the anterior line being whitish, the posterior line marked by vein-dots, the maculae by dark dots. Hindwing white, on the veins and margin brownish. New York to California. — The form **nitens** Dyar *nitens*. (38 a) is much darker, lustrous black, the reniform macula is a distinct white lunula; this form is found from Canada to North Dakota. — The larva is yellowish-brown, with a broad light lateral stripe and dorsal area with a darker, on each ring angularly expanded band therein. It presumably lives on grasses.

- mindara*. **P. mindara** B. & McD. (371) is lighter than *miranda* and distinctly marked. Forewing blackish-brown and not so lustrous, the veins of the marginal area darker striped, the anterior transverse line entirely absent, the row of vein-dots of the posterior line is distally accompanied by a somewhat lighter colour; the reniform macula is a small black luna in a whitish ring. California.
- nigrifrons*. **P. nigrifrons** Dgn. Forewing sand-coloured grey, scantily strewn with black, and with intense black transverse lines, the posterior line feebly undulate, without maculae, and with a deep black frons. Hindwing lustrous white, the outermost margin grey. Expanse of wings: 25 mm. Argentina.
- acutipennis*. **P. acutipennis** Dgn. is larger than *nigrifrons*, lilac-grey, a little strewn with white, with faint traces of darker transverse lines, of a median line, and of the maculae. Hindwing yellowish-white, at the margin smoky. Forewing somewhat more pointed at the apex than in the other species. Described from Argentina.

88. Genus: **Galgula** Gn.

Proboscis developed, palpus somewhat longer than in the preceding species, with a porrect terminal joint, the smooth frons exhibits a hair-tuft, the thorax and abdomen are smoothly scaled, the former tuftless, the latter with a tuft on the first ring. The apex of the forewing is somewhat pointedly produced.

- subapicalis*. **G. subapicalis** Hmps. (371) has bright red-brown forewings with fine black transverse lines being broken up into dots, on the averted sides scaled somewhat whitish, behind the distal line with a black costal-marginal spot; the reniform macula is marked by 2 black, distally somewhat white-pupilled dots; undulate line indistinctly darker. Hindwing blackish-brown. Jamaica.
- partita*. **G. partita** Gn. (= subpartita Gn., ferruginea Wkr., vesca Morr., bias Drc., mandane Drc., externa Wkr., sorax Mschlr.) (38 a) is the well-known little species the range of which extends into the palearctic region (cf. Vol. III, p. 217) and which is reddish greyish-brown, in the female deep blackish red-brown; the transverse lines are bordered with whitish, the maculae surrounded with whitish, with a thick blackish-brown costal-marginal spot between both. — The form **hepara** Gn. (= interna Wkr., hippotamada Drc.) (38 a) originally denotes the dark female form, but it may also refer to occasionally occurring dark males. Canada to Guatemala, in the West Indies, as far as the Canary Is. and Madeira.
- castra*. **G. castra** Schs. (38 a) is very much like *partita* from which it only differs in the posterior transverse line not being distally bordered with white and exhibiting close in front of it an oblique red-brown median line, the whitish, finely dentate undulate line being proximally bordered with red-brown. Hindwing much lighter yellowish-white. Brazil.

89. Genus: **Micrathetis** Hmps.

Very similar to the preceding genus, with still longer palpi, an entirely smooth frons, quite tuftless thorax and abdomen. Structure on the whole more slender. Exclusively from America.

- canifimbria*. **M. canifimbria** Wkr. (= novarae Fldr.) (38 b) is a small dark coppery brown species with a reddish-yellow costal margin, with indistinct transverse lines, the posterior line forming a double row of dots, and a dark spot between the quite indistinct maculae, the marginal area is more darkened, with traces of a subterminal line; fringes orange. Hindwing greyish-brown with whitish fringes. Brazil.
- triplex*. **M. triplex** Wkr. (= spilomela Wkr., contraria H.-Schäff., convida Harv.) (38 a) is much larger, yellowish white, feebly strewn with red-brown, both the transverse lines indicated by double rows of dots, the ring-macula by a black dot, the reniform macula by a small black, lighter ringed luna with a faded darker median line before it; the undulate line begins at the apex and is proximally shaded with blackish. Hindwing diaphanous white with a dark marginal line. Texas to Paraguay. A very variable species. — In **pallidegrisea** Strd. (= ab. 1 Hmps.) the ground-colour is light grey, also the hindwing is grey, at the margin brownish. — **subaquila** Harv. (38 a) is on the anterior body and forewing much more intensely suffused with red-brown, whilst in **obscurbrunnea** Strd. (= ab. 3 Hmps.) this colour is a blackish-brown.
- benjamini*. **M. benjamini** sp. n. (38 b) differs from the preceding in its somewhat broader forewing with a less oblique distal margin, a grey ground-colour with a more intense silky lustre than in the allied forms, and irrorated with yellowish, purple grey or red-brown of a very variable intensity; the transverse lines are of a course somewhat similar to *triplex*, but in correspondence with the less oblique distal margin steeper, particularly the posterior line which is composed of a double row of dots, the distal row of which is much thicker and, in several specimens, shows traces of fine acute-angular lines of connection with the proximal line; the antemedian line is irregular, a blackish shadow; the ring-macula is a fine black circle or dot, the reniform macula is very

broad, almost square, in the two lower angles and in the upper distal angle one fine white dot each, very rarely with a fourth in the proximal upper angle, above it a dark costal-marginal shadow-like spot and another at the beginning of the two transverse lines; undulate line very close at the lighter margin; before the centrally shaded fringes a row of black crescents. Hindwing of a pure white, at the apex very slightly smoky. According to several specimens from Mexico (Guerrero, Orizaba, Misantla, Zacualpan, Tehuacan). Type in the Coll. DRAUDT.

M. dasarada *Drc.* (42 a). Forewing light ochre-yellowish, strewn with brown, at the costal margin *dasarada*, suffused with red-brown and as far as the posterior transverse line with olive-brown, the anterior line being absent, both the maculae being marked by black dots, the posterior transverse line runs obliquely and is ochre-yellowish, distally accompanied by a fine brown line; the whitish undulate line is proximally bordered with brown and begins in the apex. Hindwing yellowish-white. Just as variable as the preceding. — The form **dasaradella** *Strd.* (= ab. 1 *Hmps.*) is reddish-brown on the forewing, not with an olive tint. — **dasaradana** *Strd.* (= ab. 2 *Hmps.*) is much lighter, whitish, hardly irrorated with reddish or olive. — **dasaradoides** *Strd.* (= ab. 3 *Hmps.*) has instead of the dot at the cell-end a more or less complete ring. *dasaradella*, *dasaradana*, *dasaradoides*.

M. dacula *Dyar* (42 a) is similar to the preceding, the transverse lines run much more obliquely, *dacula*, the ground-colour is a darker, more reddish brown. Hindwing much darker. Panama, British Guiana.

M. tecnion *Dyar* (42 a) is somewhat smaller than *dacula* and more distinctly marked, with broader *tecnion*, wings than the likewise very similar *dasarada*, the transverse lines not so oblique, before the less oblique median line with a slight brown shadow, the line itself is bent at the black punctiform reniform macula; the subterminal line beginning in the apex is here marked with a black streak. Hindwing light yellowish, lighter than in *dacula*, but not so white as in *dasarada*. Expanse of wings: 13 mm. Panama, March till May.

M. costiplaga *Sm.* (38 b). Forewing light ochre-yellowish, irrorated with red-brown, with but feebly *costiplaga*, marked transverse lines, the posterior line being dentate, with a row of dots behind it; the ring-macula is a brown strigiform spot, the reniform macula is a triangular black spot in which there is a lighter one extending to the costal margin; the undulate line is proximally feebly shaded with red-brown. Hindwing light yellowish-brown. Arizona. — Mexican specimens are mostly larger, lighter, ivory-coloured white, collected by PURPUS at Rascon (S. Luis Potosi), in the Berlin Museum, whereas specimens from Paradiso (Arizona) are more reddish-yellow.

90. Genus: **Crambodes** *Gn.*

The genus contains but 2 slender species distinguished from the preceding by the admixture of hair on the thorax with a small loose tuft on the prothorax, small double tufts on the mesothorax and a loose one on the metathorax. The abdomen exhibits a tuft only on the first ring.

C. talidiformis *Gn.* (= *conjungens* *Wkr.*) (38 b). Forewing reddish ochreous brown, at the costal *talidiformis*, margin broadly darkened by blackish, with brown-striped veins and a red-brown cellular stripe, with double transverse lines, very long dentate, with a row of dots behind the distal line; the reniform macula is a narrow strigiform spot surrounded by white; the undulate line is dentate, proximally shaded with red-brown, the fringes are speckled. Hindwing white, at the margin feebly brownish. Canada to Mexico. — The slender green larva has double white dorsal lines, a little strewn with red, and a red stripe below the stigmata. It lives on Verbena.

C. lunata *B. & McD.* (38 b). Forewing dull brownish-black, a little strewn with black, the whole *lunata*, marking is very indistinct except a small white luna in the reniform macula, the coniform macula and the posterior transverse line are hardly visible, the latter particularly at the hind-margin, and behind it the veins are black-striped as far as the light undulate line. Hindwing smoky brown, at the margin darkened. Nevada.

91. Genus: **Platysenta** *Grt.*

Separated from the preceding by the thorax being purely clad with scales and exhibiting loose tufts in front and behind; the slender structure and the small tuft on the first abdominal ring correspond with *Crambodes*. The genus contains only three species being also in the exterior very similar to the preceding.

P. temecula *Barnes* (38 c). Forewing red-brown, irrorated with blackish, with black veins and a *temecula*, dark shaded median vein, the apex being parted by a dark, above and below lighter shadow, the transverse lines are scarcely indicated, instead of the reniform macula there is a white streak with yellowish-white dots before and behind it, followed by some black internerval streaks. Fringes speckled. Hindwing light brown. Arizona.

- discistriga*. **P. discistriga** Sm. (38 c) is larger than the preceding, of a more ochreous reddish colour, in and below the cell more intensely strewn with black; the transverse lines are indicated by rows of vein-dots or streaks, at the costal margin by small whitish strigiform spots, the reniform macula is very narrow, surrounded with black, with a small whitish spot below behind it; instead of the undulate line there are small black sagittiform spots. Hindwing of a pure white. Colorado, Durango.
- videns*. **P. videns** Gn. (= *indigena* Wkr., *atriciliata* Grt., *meskei* Spr.) (38 c). Forewing red-brown with black-strewn veins and rows of black and white vein-dots instead of the transverse lines; at the lower cell-end there is a faded black stripe with 3 white dots; the undulate line is absent. Hindwing white, at the margin brownish. Massachusetts to Colorado. — The dull green larva with white longitudinal lines lives on Solidago. — The form
- albipuncta*. **albipuncta** Sm. is lighter, yellowish-grey, only in the disc irrorated with red-brown, in the marginal area except the apex suffused with blackish. Texas.

92. Genus: **Gonodes** Hmps.

A small number of representatives from mostly tropical districts without any differences from the preceding except the not so slender structure and a slight excision below the somewhat pointedly produced apex of the forewing.

- dianiphea*. **G. dianiphea** Jones (38 b). Forewing ochre-brownish, in the disc irrorated with red-brown and a large brown triangular spot at the margin below the apex, with very indistinct transverse lines, the anterior line being partly double; the reniform macula is a brown triangular spot, bordered with white and black, with a white wedge-shaped spot before it above the median; behind the double dots of the distal transverse line the upper median branch is on both sides striped white. Hindwing yellowish-white, at the margin brownish. Brazil.
- albifascia*. **G. albifascia** Hmps. The white forewing is irrorated with reddish brown and as far as the posterior transverse line strewn with blackish-brown; behind the traces of the brown anterior transverse line the median is white-striped with a black dot at the lower cell-end; the double posterior transverse line is filled up with white and meets on the discal fold an oblique white apical band which is below shaded with brown and below which, towards the hind-margin, there is a white spot; behind the white undulate line the upper median branch and the lowest radial branch are striped white. Hindwing white, at the margin brownish. Expanse of wings: 28 mm. Peru.
- netopha*. **G. netopha** Schs. (42 b). The lower part of the wings from the base of the hind-margin to the distal margin below the apex is light yellowish-red, in and below the cell with a pink tint, above it brown; below the centre of the cell there is a blackish longitudinal stripe bordered with red-brown, at the cross-vein a dark dot; a fragment of the posterior transverse line is distally bordered with white, behind it above the upper median branch there is a blackish-brown spot, from which white stripes extend to the margin. Hindwing brownish-grey. Expanse of wings: 26 mm. Costa Rica.
- albifissa*. **G. albifissa** Drc. (38 c). Forewing greyish-white, strewn with brown, in the proximal part beginning from the base of the hind-margin, reddish-brown, with a triangular darker shadow between the apex and lower cell-end with brown, finely white-striped veins therein, the ring-macula is a small red-brown triangular spot, the cell-end is tinted yellow and red, the reniform macula therein a brown white-edged streak with a wedge-shaped red-brown spot behind it; instead of the posterior transverse line there are single black vein-dots; the apex is parted by a white stripe, also above the upper median branch there is another one. Hindwing light brownish. Peru.
- echion*. **G. echion** Schs. (42 c). Forewing brownish ochreous with a brownish-grey triangular shadow in the centre of the costal margin, at first bordered with dark brown, then finely with white; transverse lines only fragmentary, very fine; between the lower radial branches there is a subterminal blackish-brown spot. Hindwing brownish-grey. British Guiana.
- obliqua*. **G. obliqua** Drc. (38 d) is a well-known species. Forewing light red-brown, in the apical third irrorated with whitish, with fine black transverse lines bordered with whitish; the narrow strangulated reniform macula is red, bordered with yellow, and from its lower end an oblique red-brown streak extends to the anal angle; before the faint lighter undulate line there are small brown spots, above the lower median branch there is a larger blackish spot. Hindwing yellowish-white, at the margin red-brown. Colombia.
- liquida*. **G. liquida** Mschlr. (= *violaseens* Schs., *leada* Drc.) (38 d). Forewing in the proximal part as far as the centre of the costal margin and anal angle light reddish-brown, from there darker brown with light veins, the anterior transverse line indistinctly double, the posterior line distally bordered with whitish, the reniform macula is large, the ring-macula absent; instead of the undulate line there are small red-brown spots, at the anal angle there is a black spot. Hindwing reddish-brown. Distributed from the southern parts of North America to Paraguay. — In ab. **tornalis** Strd. (= ab. 1 Hmps.) the black spot above the anal angle is absent.
- cuneata*. **G. cuneata** Dyar is smaller than the preceding, the brown costal area is confined to a small costal-marginal triangle which only extends to the centre of the reniform macula, the posterior transverse line is more bent in an obtuse angle, to which a broad stripe extends from below the apex, whence it is continued to the centre of the reniform macula. Expanse of wings: 23 mm. Panama. — According to recent statements, this form is identical with *echion* (42 c), the name being thus synonymous.

G. aroensis Schs. (38 c). Forewing ochreous brownish, the anterior transverse line marked by dots, *aroensis*. the ring-macula is a wedge-shaped white spot, surrounded by black except above, the narrow reniform macula expands at the lower cell-end and forms a large dark spot, behind it at the upper end a black spot; the posterior transverse line is double, filled up with whitish; before the light undulate line there are black dots, behind it the marginal area is darkened, with light veins, the apex is parted by a fine black streak above which there is whitish irroration. Venezuela.

G. densissima Dyar (42 b) differs somewhat from the diagnose of the genus, the distal margin being *densissima*. on a vein more deeply angled, not on the lower radial branch, but on the upper median branch. Forewing dark brown with a coppery tint particularly at the distal margin and hind-margin, with dark obsolete transverse lines, the most distinct is a straight shadow from the apex almost to the anal angle; no maculae whatever, a broken undulate line close before the margin is distally dark, proximally with a coppery lustre. Hindwing blackish-brown. Expanse of wings: 28 mm. Panama.

G. viridipicta Dgn. has violettish-grey forewings with green and white markings; 9 costal-marginal *viridipicta*. dots, the bordering of a green median band and the undulate line are white. Hindwing violettish black. Expanse of wings: 26 mm. French Guiana.

93. Genus: **Balsa** Wkr.

This genus contains 3 small species recalling *Nolidae*. Proboscis developed, the rather long palpus is straightly porrect, the frons smooth, but with a tuft of scales, the ♂ antennae pectinate or plain. The scaled thorax exhibits loose tufts in front and behind, the abdomen is only tufted on the first ring; body slim.

B. malana Fitch. (= *obliquifera* Wkr.) (38 c) is a small species also occurring in Siberia and Japan *malana*. (cf. Vol. III, p. 317, pl. 48 d), with brownish-grey forewings with finely black-striped veins, strongly notched irregular transverse lines and median line, as well as a very indistinct lighter undulate line. Hindwing light reddish-brown. Canada to Pennsylvania, Wisconsin, and Kansas. — The green, white-striped larva lives in leaves of apple-trees.

B. tristrigella Wkr. (= *zelleri* Grt.) (38 d) is smaller than *malana*, the ♂ with plain, not pectinate *tristrigella*. antennae, more reddish-brown, otherwise very similarly marked, the posterior transverse line much more indistinct, the undulate line quite absent. New York to Texas.

B. labecula Grt. (38 d) is larger, more greyish-white, hardly brownish, with less distinctly striped *labecula*. veins, with more distinct sharply dentate transverse lines, the posterior line distally bordered with whitish, undulate line very indistinct. Hindwing very light brownish. New York, Wisconsin.

94. Genus: **Nolasodes** Hmps.

Structure quite the same as that of *Balsa*, but the palpus is obliquely rising, the terminal joint very long, and the prothorax is tuftless. The forewing lacks the accessory cell. But one species has been described.

N. atrisignata Hmps. (38 c). Forewing reddish-brown, a little strewn with black, particularly in and *atrisignata*. below the cell-end, with brown indistinctly double transverse lines; on the cross-vein there are, like in the species of *Nola*, 2 small heaps of black erect scales; before the light, proximally dark-edged undulate line there are short black striae. Hindwing yellowish-red. French Guiana.

95. Genus: **Monodes** Gn.

This genus contains a vast number of rather small species with a well developed proboscis, erect slender palpus, and smooth frons, of a rather slender structure; the anterior body is chiefly clad with scales and shows feeble loose tufts on the pro- and metathorax. The abdomen is only tufted on the first ring. In many of the first species the ♂♂ often exhibit peculiar secondary sexual distinctions: hair-tufts on the anterior tibiae and tarsi, long hair on the upper or under surface of the forewing or also hindwing. Their chief range extends over the New World where they are found from North America down to Patagonia. But there are also some representatives in Indo-Australia.

M. cuprescens Hmps. (38 d) is the only species with strongly serrate antennae; the forewing is *cuprescens*. coppery reddish-brown with darker transverse lines being on the averted sides bordered with white, and a brown median shadow between the white-ringed maculae; the apex is parted by a whitish diffuse patch, the undulate line is also white. Hindwing light brown. Hayti.

M. deliriosa Wkr. (= *poliotis* Hmps.) (38 d) has much less serrate antennae; forewing white, excepting *deliriosa*. the base and the proximal half of the median area irrorated with light brown, with indistinct double transverse

lines, the posterior line below the reniform macula very much curved, and with an intense black median shadow between the maculae which are surrounded with brown; the undulate line is indistinctly white. Hindwing *deliriosella*, diaphanous white, at the margin feebly brownish. — ab. **deliriosella** *Strd.* (= ab. 1. *Hmps.*) has a red-brown median shadow, a black connecting streak between the transverse lines on the submedian fold, and 3 blackish-brown spots before the anterior transverse line. — ab. **deliriosula** *Strd.* (= ab. 2 *Hmps.*) has all the three maculae black-centred, and — ab. **atristrigata** *Strd.* (= ab. 3 *Hmps.*) combines the marks of *deliriosella* with the black-centred maculae of *deliriosula*. Bahamas, Hayti.

aggyra. **M. aggyra** *Drc.* (38 d) has plainly eiliated antennae like all the following; forewing red-brown mixed with ochre-yellowish, the costal-marginal veins and the median vein yellowish-white; the double transverse lines are filled up with yellowish-white, the maculae in yellowish-white rings and surrounded with black, the reniform macula on the median vein proximally produced and above and below white-dotted, the yellowish undulate line is proximally marked with brown. Hindwing greyish-brown with a dark central dot and transverse line behind it. In the ♀ there is a broad yellowish-white costal-marginal streak. Panama to Colombia.

villicosta. **M. villicosta** *Wkr.* (38 d) is a very peculiar insect owing to the long costal-marginal hairing of the ♂, hanging down over the forewing as far as the median vein. Forewing lustrous reddish-grey intermixed with silvery scales, with very faint markings, the transverse lines only indicated, the posterior line more or less dotted; no maculae whatever except a light dot in the lower cell-angle; undulate line dotted dark. Hindwing white, at the costal margin reddish-brown. The ♀ is more red-brown and more distinctly marked. Panama to Brazil.

devara. **M. devara** *Drc.* (38 e). In this species and the following *barbarossa* the ♂ is long-haired on the forewing beneath, the hair being turned upwards below the submedian fold, otherwise turned downwards, and besides with hair-tufts at the base of the costal margin and a fold at the lower cell-angle. Forewing purple red-brown, towards the costal margin darkened with blackish-striped veins; the transverse lines are black, the posterior line is double, filled up with a pinkish white; the maculae are small, narrow and oblique, bordered with whitish; in the apex there is a yellow trieuspidate spot. Hindwing greyish-brown. Mexico to Panama, and in Jamaica.

barbarossa. **M. barbarossa** *Hmps.* (38 e) is very similar to *devara*, larger on an average, below the whitish apical patch with a black triangular diffuse spot extending from the margin on the discal fold to the posterior transverse line; both the transverse lines are double, filled up with white, the posterior line is towards the hind-margin more curved towards the distal margin, and here with black and white vein-streaks behind it; undulate line light, in *devara* dark. Hindwing much darker, coppery blackish-brown. Trinidad, Paraguay.

vittifera. **M. vittifera** *Hmps.* (38 e). Here the ♂ forewing beneath is uniformly clad with silky hair. A very small red-brown species, in the hindmarginal half of the median area yellowish with fine black double transverse lines filled up with grey, and an indistinct grey reniform macula; before a small grey apical spot there is a black wedge-shaped spot with an ochreous streak below it, in the ♀ besides with a black streak in the centre of the cell. Hindwing light brown. Panama to Brazil.

antica. **M. antica** *Wkr.* (= *detrecta* *Drc.*, *concisa* *Drc.*, *fuscimacula* *Hmps.*) (38 e), like the following 3 species, has in the male both wings beneath thickly covered with blackish-brown scales. Forewing brown, strewn with a darker colour, with double transverse lines being filled up with a hardly lighter colour, the maculae marked with black and white, the ring-macula being only a dot, the reniform macula a black streak; behind the distal transverse line there are black vein-dots, the light indistinct undulate line is proximally marked with brown. Hindwing light reddish-brown. Widely distributed from Mexico to Venezuela.

fuscimacula. **M. fuscimacula** *Grt.* (38 e) is very similar, with narrower wings, greyer, only in the upper half of the median area and at the distal margin more reddish, with black single transverse lines being on the averted sides bordered with grey, the small and narrow maculae black-centred and in grey rings; the grey undulate line is proximally shaded with red-brown. Hindwing greyish-brown. From Florida and Texas.

hyposcota. **M. hyposcota** *Hmps.* (= *fuscimacula* *Hmps.* part.) (38 e) is likewise similar, more yellowish red-brown, in the central and marginal areas irrorated with greyish-brown, and easily discernible by the scarcely darker centred maculae, only the reniform macula is above and beneath filled up a little more with black; the posterior transverse line is filled up more with yellowish, and behind it there is a double row of black vein-dots. Hindwing yellowish-brown. Costa Rica to Peru, also in St. Vincent and Grenada. The species is somewhat smaller on an average.

insipida. **M. insipida** *Dgn.* (38 e) is still smaller, greyish-brown, the anterior transverse line is double, filled up with grey, the posterior line quite obsolete; the ring-macula is a black dot in a grey ring; the reniform macula is feebly surrounded with brown; undulate line grey. Hindwing light brown. Ecuador.

deltoides. **M. deltoides** *Mschlr.* (= *harudes* *Drc.*) (38 e). The ♂ exhibits here and in the two following species both the wings beneath densely covered with ferruginous brown hair in the basal parts; a small, common and easily recognizable species. Forewing light violettish-brown with a large chocolate-brown central spot bordered with white; the marginal area is occupied by a large red-brown triangular spot, the transverse lines are double,

filled up with white; the reniform macula is a small dark lunula surrounded with grey with a small black triangular spot behind it. Hindwing white, at the apex and margin brown. Mexico to Paraguay, also in Jamaica, Cuba, and Dominica.

M. nubicolora Gn. (= *unesignata* Wkr., *paginata* Morr.) (38 f) has grey forewings irrorated with red-brown, with a lighter costal area and a red-brown marginal area, and with double transverse lines filled up with whitish, the posterior line terminating close in front of the anal angle; only the narrow, small whitish luna of the reniform macula is present with one small dark triangular spot each before and behind it. Hindwing of a pure white. — In the form **clara** Harv. (38 f) the black surroundings of the maculae are absent. From Florida and Texas to Brazil and Peru.

M. subrubens Gn. (38 e). Forewing greyish-brown, in the costal-marginal area light reddish with black and white strewn veins and a large dark brown triangular spot, the apex of which is situated in the lower cell-angle, the base of it at the hind-margin, and defined by the transverse lines which are bordered with whitish; no maculae; undulate line proximally shaded with dark. Hindwing light brown, in the ♂ at the hind-margin with fiery red hair. Brazil, Paraguay, Peru.

M. punctula Schs. (38 f). The ♂ has only the hindwing beneath clad with rough scales; forewing brown with a grey tinge and feebly strewn with dark; transverse lines double, the distal line with a double row of vein-dots behind it; the maculae are in whitish rings and surrounded with black, darker centred, between them a faded median line; before the hardly lighter undulate line there is proximad somewhat darker shading. Hindwing dark red-brown. Brazil.

M. atrisecta Hmps. (38 f) is an easily recognized species with ochre-reddish forewings, feebly strewn with a darker colour, with brown-striped veins and a blackish-brown stripe on the discal fold from the centre of the cell to the margin and here upwards continued to the apex; the transverse lines are fine black, before the anterior line a brown band, the posterior line being only double at the costal margin is in the middle reduced to internerval dots; the maculae are very small, whitish, only the reniform macula is finely surrounded with black and on the inside pupilled with a brown streak. Hindwing yellowish brown. Brazil.

M. perigeana Schs. (42 b). Forewing lustrous lilac-brown, strewn with a darker colour, with a blackish-grey median shadow and very fine blackish-brown single transverse lines, behind the distal line with black vein-dots; the maculae are surrounded with greyish-brown; subterminally there are small blackish-brown internerval spots. Hindwing white, at the margin narrowly brownish. Expanse of wings: 31 mm. Costa Rica; Panama-specimens are smaller, the markings less darkened.

M. interstriata Hmps. (38 f) has ochreous-yellowish forewings irrorated with brown in the costal portion with fine brown veins, and in the marginal area with internerval streaks; the small maculae are surrounded with brown and centred with brown dots, between them brown irroration in the cell, the anterior transverse line is entirely absent, the posterior line is marked by double rows of vein-dots. Hindwing whitish, at the margin brownish. Paraguay.

M. discisigna Hmps. The ochre-yellow forewing is in some places irrorated with reddish and strewn with black, behind the cell irrorated with dark brown, in the centre of the marginal area with black internerval streaks, the end of the median vein white, the transverse lines are incomplete, indicated by rows of dots; in the centre of the cell there is a faded blackish-brown spot, and behind the cell a round blackish spot, instead of the undulate line there are minute black spots. Hindwing reddish brown. Expanse of wings: 28 mm. Jamaica.

M. tenuifascia Hmps. has whitish forewings irrorated with light red-brown; only of the anterior transverse line there are brown traces, the very small reniform macula is incompletely surrounded with dark brown, behind it on the discal fold there is a dark streak which meets an oblique apical streak; in the marginal area dark internerval streaks. Hindwing of a pure white. Expanse of wings: 20 mm. Argentina.

M. goyensis Hmps. is similar to *tenuifascia*, somewhat larger, on the forewing somewhat more strewn with dark brown and with intenser markings, the posterior transverse line is double, filled up with whitish, in the centre of the cell a blackish-brown spot, the reniform macula is on the sides bordered with blackish-brown, before it darker irroration, the small coniform macula is also surrounded with blackish-brown; the black marginal dots are proximally pupilled with whitish, with small dark spots before them. Hindwing light reddish-brown. Expanse of wings: 22 mm. Argentina.

M. rubrisecta Hmps. (38 f) is likewise similar to the two preceding species, with narrower wings, on the ochreous-reddish forewing with a dark triangular shadow extending from the margin below the apex to the submedian fold; the transverse lines consist of double rows of vein-dots; in the lower cell-angle there is a small dark spot; the subcostal branches are striped whitish. Hindwing yellowish-white, at the apex brownish. Brazil.

M. costagna Schs. (38 g) is in the upper half of the forewing from the base of the hind-margin obliquely to the apex light ochreous, below it red-brown mixed with grey, the transverse lines are in the brown portion indicated by white lines, in the yellow portion by dark costal-marginal streaks, behind the distal line with black vein-dots; the reniform macula is small and narrow, only below bordered with white; the veins below it partly white-striped; before the whitish undulate line irrorated with brown. Hindwing white, at the margin red-brown. Brazil.

- micromma*. **M. micromma** Dyar (42 b) is very similar to *costagna*, but much smaller, whilst in *costagna* the upper median branch shows a long ochreous stripe, it is absent here, but the space between the two median branches is ochreous-yellowish; hindwing much darker. Panama, taken in March till May.
- monyma*. **M. monyma** Drc. (38 f). Forewing light yellow, base of hind-margin and median area irrorated with red-brown, the marginal area is blackish brown with a round yellow apical spot, the anterior transverse line is indistinctly double, the posterior line brown, distally bordered with yellow; the small maculae are incompletely surrounded with brown, between them a faded red-brown median line; the light undulate line is very feeble. Hindwing of a pure white. Mexico to Panama.
- commacosta*. **M. commacosta** Dyar (42 c) is very similar to *monyma*, but smaller and more distinctly marked, in the costal part light loam-coloured, below it red-brown towards the margin tinted with purple, in the median area black-striped, the distal transverse line narrower, light, straighter. Expanse of wings: 18 mm. Panama.
- agrotina*. **M. agrotina** Gn. (= *trientiplaga* Wkr., *guttula* H.-Schöff., *arnoides* H.-Schöff., *aduncula* Fldr.) (38 f) is a very common, wide-spread species; in the costal part ochre-yellowish, below it more red-brown; the anterior transverse line is double, the posterior line only at the costal margin, below it single and distally bordered with whitish; the small maculae are finely surrounded with blackish and centred light brown; in the apex there is a black dot; before the margin there are small black internerval stripes. Hindwing diaphanous whitish, at the margin hued with brown. From Florida to Brazil and Paraguay. This species has been made the type of a genus *Psilomonodes* which has been established in Vol. III (p. 217) and to which the palearctic species *venustula* and *abbreviata* belong.
- proleuca*. **M. proleuca** Hmps. (38 f) is similar to the following species, smaller, more yellowish-white, with a large red-brown hindmarginal triangular spot, separated from the likewise triangularly brown marginal area by the distal transverse line which is distally very broadly bordered with white; the anterior transverse lines and the ring-macula are absent; the reniform macula is very small and narrow, centred with brownish and above open; a small white coniform macula is finely surrounded with black; the apex is parted by a curved white band. Hindwing light brown, on the veins and margin brownish. Bahamas.
- subobliqua*. **M. subobliqua** Wkr. (= *vittata* Wkr., *trapezoides* Wkr., *mutata* Mschlr.) (38 g). Forewing red-brown with a broad ochreous costal band; the anterior transverse line is in the brown part a white line, above it a black cellular dot, the double posterior transverse line is filled up with a pure white and behind it broadly bordered with white; the coniform macula and the small very narrow reniform macula are of a pure white, the latter centred with a brown streak. Hindwing yellowish-white, at the margin brownish, in the ♀ quite brown. From Mexico to Brazil and Paraguay. Common.
- jalapensis*. **M. jalapensis** Schs. (= *darpa* Drc.) (38 g) is very easily discernible by the greyish-brown forewing, in the marginal area of a purer brown, with a broad yellowish-white costal-marginal stripe; the transverse stripes are rather inconspicuous, the posterior one double, the maculae purple-grey, surrounded with a darker colour and centred with brown. Hindwing white, on the veins and margin brownish. Mexico.
- versicolor*. **M. versicolor** Grt. (38 g). Forewing dull purple reddish, strewn with brown, in the median area and behind it irrorated with a brownish grey, with fine dark transverse lines, the posterior line distally bordered with white and with short vein-streaks behind it; the small maculae are indistinctly surrounded with brown, before and behind the reniform macula with one black triangular spot each; the apex is parted by an oblique ochreous spot. Hindwing greyish-brown. Canada, United States (New York). — The dark brown larva is dorsally lighter and posteriorly slightly tinted with pink, with a white spot on the 12th ring; it lives on withered leaves of oak.
- chalcedonia*. **M. chalcedonia** Hbn. (= *arna* Gn., *expuncta* Wkr., *vineta* Wkr., *irresoluta* Wkr., *tracta* Grt.) (38 g) is larger than the preceding, with narrower wings, otherwise very similarly coloured and marked, ochreous-brownish, in the basal area and the base of the costal-marginal area more ochreous-yellow, the double transverse lines filled up with yellowish, between and behind the small yellow-ringed maculae with a black streak on the discal fold; the light apical spot is more brownish, not so yellowish-white as in *versicolor*. Hindwing diaphanous white, at the margin brownish. In the ♀ the basal area and the base of the costal-marginal area is irrorated with brown and not lighter. Canada to New Mexico.
- purpusi*. **M. purpusi** sp. n. (38 g) forms the transition from the preceding species to the following; the ground-colour is an entirely monotonous greyish brown with a reddish reflection, finely marked with blackish as in *festivoides*, without any white behind the postmedian line which is much straighter and extends much more obliquely to the hind-margin than in *chalcedonia*, the black vein-streaks behind it are quite indistinct, the maculae much smaller than in *festivoides*. Hindwing darker greyish-brown than in the two species. Type in the Coll. PURPUS in the Berlin Museum from Rascon (S. Luis Potosi, Mexico).
- festivoides*. **M. festivoides** Gn. (= *cephalica* Btlr.) (38 h) is likewise a very similar species, but on the grey ground irrorated with brown, the double transverse lines filled up with whitish, the maculae whitish, strewn with a brownish grey, before and behind the reniform macula blackish irroration; the very indistinct undulate line is light, faded. Hindwing greyish-brown. Canada to Florida and Texas. — ab. **albovariegata** Strd. (= ab. *gata*. 1 Hmps.) is on the forewing more intensely mixed with white in the basal and costal-marginal areas and behind the distal transverse line. — ab. **varia** Wkr. (38 h) in contrast with it is more monotonous, lighter, and without the black spots before and behind the reniform macula.

M. bogotana *Flör.* has yellowish-white forewings strewn with dark brown, with a darkened marginal *bogotana*, area and fine black, indistinctly double transverse lines and a black spot between the brown-centred maculae which are finely encircled with black; the apex is parted by an oblique light wedge-shaped spot extending to the postmedian line; the whitish undulate line is only traceable. Hindwing light brown. From Colombia to Chile. Expanse of wings: 22—28 mm.

M. olivescens *Dgn.* Forewing coarsely strewn with white, red-brown, and green scales, at the costal *olivescens*, margin, hind-margin and postdiscally of a purer green, a white cellular patch is continued obliquely behind it to the apex; in the cell there is a brown spot, a brown discal streak behind it; the anterior transverse line is only represented in the lower portion by 2 white streaks between the median and the hind-margin; subterminally there are small red-brown internerval spots, behind them in the reddish shaded marginal area there are some more red-brown internerval spots. Hindwing brown, discally brightened up by whitish. Expanse of wings: 21 mm. French Guiana.

M. exesa *Gn.* (= *floridasa* *Wkr.*) (38 h) is larger than the preceding, otherwise very similarly marked, *exesa*, but of a more monotonous colouring, duller brown with a darker nebulous stripe in and below the cell from the anterior transverse line to the margin from below the apex to the end of the lower median branch, with darker striped veins; the transverse lines are double, behind the distal line there are black and white vein-dots; the small maculae are also finely encircled with black, between them on the discal fold there is a black streak, behind the cell a small black spot; in the apex there is an irregular ochreous spot from which the yellowish undulate line starts. Hindwing reddish brown. Florida to Mexico. — The form **trolia** *Dyar* is a smaller, slim *trolia*, form with narrower wings, with a lighter, not brown-shaded under surface. From Panama.

M. renipes *Schs.* (38 h) has brown forewings, at the costal margin, in the cell as far as the posterior *renipes*, transverse line and at the distal margin the darkest, at the hind-margin broadly yellowish-red, very similarly marked as the preceding, with double transverse lines and somewhat lighter maculae finely encircled with dark, the reniform macula foot-shaped, the toes showing towards the ring-macula; below the apex there is a black subterminal streak. Hindwing thinly scaled, smoky brown. Mexico, Costa Rica.

M. obliquirena *Hmps.* (38 h) likewise belongs yet near to the preceding from which it differs in the *obliquirena*, absence of the black discal streak in the cell. Forewing ochreous-reddish brown, in the centre of the marginal area irrorated with brownish grey, with double transverse lines filled up with yellowish, behind the distal line with black and white vein-streaks; the small maculae have reddish centres and yellow rings; the undulate line is composed of small yellowish spots and proceeds from a large apical spot. Hindwing yellowish white, on the veins and margin red-brown. Panama to Paraguay and Argentina, also in St. Vincent.

M. ensina *Barnes* (38 h) is larger than the preceding, of a brighter red-brown, the double transverse *ensina*, lines filled up with grey, before the anterior line at the costal margin there is a quadrangular black spot, behind the distal line darker grey irroration with a black internerval streak in the centre; the small maculae have lighter rings and darker centres, from the reniform macula, which is proximally produced on the median, a black streak extends to the postmedian line. Hindwing brownish-grey, at the margin darker. Arizona.

M. polysticta *Jones* (38 i) is a small species with broad wings, being slightly concave below the somewhat *polysticta*, produced apex. Forewing light red-brown, in the marginal area darker; transverse lines indistinctly double, the posterior line punctiform; the small maculae in white rings, the reniform macula below black-centred, undulate line indistinctly darker, above it at the apex a small white strigiform spot. Hindwing brownish-grey. Brazil.

M. apicalis *Schs.* (38 i) is much larger, light red-brown, strewn with blackish, with a large triangular *apicalis*, bluish-grey spot in the marginal area; the transverse lines are quite indistinct, the posterior line double and with black vein-dots behind it; only the small ring-macula is present and surrounded with brown, the reniform macula being absent; the undulate line is composed of reddish patches with small black sagittae before them. Hindwing red-brown. Venezuela, Brazil.

M. pallescens *Hmps.* (38 i). Forewing greyish-white, strewn with reddish, in the marginal area red- *pallescens*, brown; at the costal margin there is before the anterior transverse line a red-brown spot, another irregular one below it from the cell to the hind-margin; transverse lines indistinctly double, behind the distal line white vein-dots; the maculae are in whitish rings and with blackish centres; the indistinct light undulate line starts from a yellow apical spot and exhibits outside black dots and on the discal fold a black streak. Hindwing red-brown. Venezuela.

M. pulida *Dgn.* (= *hemipolia* *Drc.*) (38 i) is on the forewing in the basal half greyish-white, behind *pulida*, it red-brown, the anterior transverse line is double, dentate, the posterior line white, single; the maculae are quite feebly indicated, the reniform macula is an oblique blackish-brown lunula in a grey ring, the undulate line greyish-white. Hindwing brownish-grey. Peru.

M. aphronistes *Dyar* (42 c). Forewing dark purple grey, in the costal half of the basal area, above *aphronistes*, the maculae and in an apical strigiform spot flesh-coloured reddish, both the transverse lines are narrow, feebly

lighter, dentate, the maculae large, with light grey centres; the hind-margin is broad, strewn with grey and flesh-coloured scales, below the light apical streak there is a black streak. Hindwing light greyish-brown, at the margin darker. Expanse of wings: 23 mm. Colombia, Bogotá.

phaeopera. **M. phaeopera** *Hmps.* (38 i) has greyish-yellow, darker strewn forewings, in the upper half of the middle area irrorated with blackish, with indistinctly double transverse lines, and vein-streaks behind the distal line, the small maculae with blackish-brown centres and finely surrounded with black; hindwing yellowish-brown, on the veins and margin darker. Venezuela.

medioclara. **M. medioclara** *Schs.* (42 c) is allied to the following; in the basal third obliquely cut off as far as the centre of the hind-margin and in the postmedian area greyish-brown, in the middle area whitish-grey with double white-filled transverse lines, the distal line from the reniform macula to the hind-margin, behind it another brown postmedian line, behind which there are some blackish-brown spots; the large grey maculae show white rings; distal margin darker grey, before it a whitish subterminal shadow. Hindwing white, at the apex blackish-brown. In the ♀ the middle area is strewn with a darker grey, the whole wing being darker, too. Expanse of wings: 28 to 33 mm. Costa Rica.

niveiplaga. **M. niveiplaga** *Schs.* (38 i). Forewing yellowish-grey, irrorated with reddish and strewn with black, with double white-filled transverse lines, before the anterior line with a large white spot at the hind-margin and with yellowish maculae surrounded with black, the reniform macula below filled up with black, between both a strong black middle line; before the whitish undulate line there are black spots, behind it in the lower half 3 black streaks to the margin. Hindwing white, at the margin blackened. Mexico to Venezuela.

polyporia. **M. polyporia** *Dyar* (38 i) was described as *Acronycta*, but according to several pure specimens before me, this small species belongs hereto near the preceding. Forewing purple grey, strewn with brown, at the base broadly shaded with black and with a long black stripe through the lower cell-end to the margin, here above it with 2 short streaks; transverse lines fine, running just like in *niveiplaga*, with the same maculae. Hindwing diaphanous white, at the apex smoky, in the ♀ entirely darkened. Mexico (Zacualpan), taken in May.

leucomela. **M. leucomela** *Dgn.* (38 k). Forewing white, in the basal and submedian areas blackened with $\frac{2}{3}$ black transverse lines, the maculae finely surrounded with black, between them at the costal margin a black spot; in the marginal area there is blackish irroration on the folds. Hindwing brownish-grey, at the margin darker. Argentina.

mastera. **M. mastera** *Schs.* (38 k). Forewing on the white ground strewn with olive-green and purple grey, the darkest in the median area; the black transverse lines are bordered with white on the averted sides, the whitish maculae are incompletely surrounded with black, the reniform macula is proximally produced on the median; before the white undulate line there is at the costal margin a black spot, and behind that line on the discal fold a brown triangular spot. Hindwing light brown. Brazil.

marmorata. **M. marmorata** *Schs.* (38 k) has yellowish-white forewings strewn with brown, in the median area below the cell olive-yellow and behind the distal transverse line red-brown; the black dentate transverse lines are on the averted sides bordered with white, behind the distal line in the lower half extensively irrorated with reddish-white; between the white maculae the ground of the cell is darkened. The apex is parted by an oblique white streak, before the light undulate line there are small feeble black sagittae. Hindwing reddish-brown. Costa Rica to Brazil.

semirufa. **M. semirufa** *Drc.* (38 k). Forewing in the basal half reddish-brown, in the distal half dark brown, in the basal area irrorated with white, with brown indistinctly double, white-filled transverse lines; the maculae are but very feebly marked, behind the reniform macula there is a yellowish-red spot; the apex is parted by an oblique white patch, below it on the discal fold a yellow streak. Hindwing light brown. South-Eastern Pern.

repanda. **M. repanda** *Schs.* (38 k) is a very small brown species, with a lighter, above roundish spot in the centre of the hind-margin, with black-striped veins of the marginal area; transverse lines rather indistinct, filled up with whitish, ring-macula absent, the reniform macula is a narrow lunula surrounded with dark; from the apex being obliquely parted by light the indistinct darker undulate line proceeds. Hindwing white, at the margin brownish. Mexico.

basistigma. **M. basistigma** *Wkr.* (38 k) has white forewings feebly tinted light brown, with a blackish-brown basal area, light brown, double, white-filled transverse lines, and a white reniform macula which is surrounded with black; the distal half of the median area is irrorated with brown; the white undulate line is proximally irrorated with brown. Hindwing light brown, at the margin darker. Jamaica.

hemileuca. **M. hemileuca** *Jones* (38 k). Forewing white, strewn with a light reddish-brown, in the marginal half of a purer red-brown obliquely from the centre of the costal margin to the distal third of the hind-margin; transverse lines very feebly red-brown, the posterior line distally bordered with white; only the oblique white strangulated reniform macula is present, from which a dark streak extends to the postmedian line; behind the red-brown undulate line at the apex a round white spot distally bordered with red-brown. Hindwing light red-brown. Brazil.

phaeoplaga. **M. phaeoplaga** *Jones* (38 l) is a minute insect with light red-brown, darker strewn wings, in the hindmarginal region and postmedianly irrorated with whitish, with single black transverse lines and a black

streak on the submedian fold instead of the coniform macula; the whitish undulate line proceeds, bordered by a blackish streak, from the apex, the upper maculae are absent. Hindwing whitish. The ♀ shows a blackish-brown spot in the disc. Brazil.

M. chlorozona Jones (38 l) is easily discernible by the light olive-greenish colouring, the hindmarginal *chlorozona*. part, the ante- and postmedian areas being more olive-grey, irrorated with brown, the transverse lines are black, the posterior line distally bordered with white, between both with a faded black middle band, without maculae; before the faint whitish subterminal line there is feeble darker shading, above it a round white apical spot which is below tinted yellowish-brown. Hindwing brownish-grey. Brazil.

M. berthia Schs. (38 l) is a larger dark brown, white-strewn species, the veins of the median area striped *berthia*. pink; the anterior transverse line is white, on the veins interrupted, the posterior line black, distally bordered with white, and with black and white vein-dots behind it; the maculae are indicated by white, the reniform macula being proximally prolonged on the median; before the whitish undulate line there are short black streaks. Hindwing blackish-brown. Brazil.

M. sanctanna Gn. (38 l) is somewhat similar to *berthia*, larger, lighter brown, only in the costal-marginal *sanctanna*. area and behind the postmedian line darker, the transverse lines on the averted sides bordered with white, the anterior line double, the small white oblique ring-macula is surrounded with black, the similar reniform macula has a brown centre; behind the distal transverse line at the costal margin a quadrangular black spot with small white costal-marginal dots; before the grey undulate line there are small black sagittae. Hindwing whitish, at the margin brownish. Brazil.

M. rubripicta Hmps. (38 l) is another likewise similar large species with red-brown forewings mixed *rubripicta*. with ochreous and black, in the median area more yellowish, below the cell, before the ring-macula and in the lower filling of the reniform macula irrorated with a bright rosy-red colour, and with black transverse lines being bordered with yellow and white on the averted sides, between the maculae black irroration; before the yellowish marginal area there are minute blackish undulate linear spots. Hindwing greyish-brown. Venezuela, British Guiana.

M. leucostigma Drc. (38 l). Forewing red-brown, before and behind the median area irrorated with *leucostigma*. blackish, the anterior transverse line indistinct, the posterior line double, brown, filled up with whitish, the maculae with white rings, the reniform macula strangulated, the apex parted by a white patch. Hindwing reddish-brown. Peru.

M. melanodonta Dgn. has silvery white forewings, in some places striated grey, in the most distal *melanodon-* marginal area quite grey, with black transverse lines, the posterior line dentate and with white maculae *ta*. surrounded with black. Hindwing diaphanous white with a darkened apex. Colombia, Quindiu.

M. mesoleuca Dgn. Forewing in the basal and marginal area greyish-brown, irrorated with ferruginous- *mesoleuca*. red, in the median area silvery white, the maculae feebly marked and with somewhat darker centres, between them with a twice angled middle line. Hindwing blackish. French Guiana.

M. algama Schs. (38 l). Forewing yellowish-white, irrorated with brown, particularly in the median *algama*. area and the centre of the marginal area with black-strewn veins; the black transverse lines are on the averted sides bordered with white, the anterior line more with yellow, the posterior line in the lower half with black vein-streaks; between the maculae, which are surrounded with white and below almost connected, there is a black cellular spot, behind the reniform macula another one; before the indistinct whitish undulate line there is at the costal margin a black spot with small white costal-marginal dots, in the centre 2 minute black spots. Hindwing brownish with a darker postmedian line. Brazil.

M. phlegyas Schs. (42 c) is a very small species with whitish-brown forewings, at the costal margin *phlegyas*. shaded with a purer brown, the same at the base of the hind-margin; transverse lines fine, brown, the anterior line only begins below the cell and has a dark brown, distally white-edged spot behind it on the submedian fold; the large maculae are white, the reniform macula has a light brown centre, between and behind them brown shading; the apex is parted by a white streak, the postmedian area is dark brown; in the lighter marginal area there are indistinct darker subterminal spots. Hindwing dark brown. Expanse of wings: 18 mm. French Guiana.

M. pulchra Drc. (39 a) is a well-known, more widely distributed small species with whitish forewings *pulchra*. irrorated with reddish-yellow and strewn with black, black transverse lines being on each side bordered with white, and a white, proximally black-shaded undulate line with thick marginal dots behind it; the cell is filled up with black, in it the punctiform white ring-macula and the light yellow reniform macula with a black dot in its lower end. Hindwing blackish-brown. Mexico to Panama.

M. delenifica Schs. (39 a). The whitish forewing is irrorated with green and spotted black at the costal *delenifica*. margin; the anterior transverse line is only marked by dots; below the cell there is a velvety black shadow bordering on the reniform macula below and distally, the posterior transverse line is finely crenulate; the ring-macula is a black dot in the green ground, the large white reniform macula coheres with a white costal spot, it shows a white line in the centre and is proximally bordered by a black streak; instead of the undulate line

there are in the green distal margin black spots partly bordered with white. Hindwing whitish, irrorated with brownish-grey. Mexico to Costa Rica.

orbiculata. **M. orbiculata** Schs. (39 a) is much larger than *algama* which it otherwise resembles somewhat, in the colouring olive-brown, with white-edged transverse lines, a small round, purely white ring-macula, the reniform macula surrounded with black, between both black irroration. Hindwing darker brown. Brazil.

optata. **M. optata** Schs. (42 c). Forewing light olive-green with a blackish-brown spot below the base of the cell and with fine brown, white-edged transverse lines, the posterior line distally partly shaded with lilac grey; the round white ring-macula is situate in the brownish-black cell, the reniform macula is darker green, on both sides bordered with brown and white; the undulate line consists of small blackish-brown internerval spots, of which that at the costal margin and that between the upper radial branches are the largest, those situate above them being distally removed. Hindwing brownish-grey. Expanse of wings: 34 mm. Costa Rica.

chionopsis. **M. chionopsis** Drc. (39 a). Forewing yellowish-white, with an olive tint and strewn with black, the upper three quarters of the antemedian area and a postmedian costal-marginal spot are black like the transverse lines which are bordered with white; the small maculae are surrounded with black, the ring-macula is white, the reniform macula ochreous-yellow; the whitish undulate line is proximally shaded with blackish. Hindwing light brownish, at the margin darker. Peru.

streptisema. **M. streptisema** Hmps. has yellow forewings mixed with red-brown, with white transverse lines being on both sides scaled black or red-brown, a small round white ring-macula surrounded with black, the strangulated reniform macula being above yellow and below white; the yellowish undulate line is on both sides bordered with red-brown. Hindwing coppery red-brown. Expanse of wings: 20 mm. Peru.

thoracica. **M. thoracica** Schs. (39 a) is one of the largest species with bright red-brown forewings being irrorated with blackish at the costal margin and in the cell, the double transverse lines filled up with whitish, behind the distal line with black and white double dots; the ring-macula is like in the preceding of a pure white, the reniform macula red-brown, small, both surrounded with black; before the indistinctly lighter undulate line there are proximally single small black sagittae. Hindwing light brown, at the margin darker. Brazil.

castrensis. **M. castrensis** Schs. (39 a). Forewing light brown, strewn with a darker red-brown, with a large bluish-black spot in the upper three quarters of the antemedian area; transverse lines double, the small ring-macula of a pure white, the reniform macula grey with a bluish-black centre and before and behind it with chocolate spots; before the light undulate line black irroration. Hindwing brown. Brazil.

niveopsis. **M. niveopsis** Dyar (39 a) is dark ochreous-brown with black transverse lines, the anterior line being double, the posterior line followed by a row of vein-dots; ring-macula of a pure white, the reniform macula divided into 2 black round spots, between both a dark nebulous line; in the blackened marginal area the lighter undulate line extends. Hindwing blackish-brown. Mexico.

cenicienta. **M. cenicienta** Dgn. (39 a). Forewing bluish-grey, irrorated with brownish, and in the basal and median areas as well as before the undulate line irrorated with blackish-brown, the double anterior transverse line filled up with grey, the single posterior line on both sides bordered with whitish, behind the distal line with a row of vein-dots; the ring-macula is a small white spot, the reniform macula is indistinct blackish, with a grey ring; behind the grey undulate line there are black marginal dots. Hindwing greyish-white, at the margin brownish. Ecuador.

stelligera. **M. stelligera** Schs. (39 b). Forewing dark brown mixed with a greyish white, the transverse lines indicated by yellow spots and vein-dots, the same being the case with the maculae and the undulate line. Hindwing light brown with a golden reflection. Brazil.

mesomela. **M. mesomela** Dgn. (39 b). The grey forewing is feebly irrorated with red-brown and strewn darker with rather indistinct whitish transverse lines and small yellowish or whitish maculae with a quadrangular black spot between them; the apex is parted by a black streak; before the whitish undulate line dark irroration. Hindwing light brown. Peru.

cadema. **M. cadema** Schs. (39 b). The grey, black-strewn forewing is suffused with dark brown as far as the posterior transverse line and in the marginal area, the veins are black-striped, the double transverse lines filled up with grey, the posterior line quite indistinct; the small maculae are connected by a black streak; in the apex there is an oblique greyish-white spot, the indistinct grey undulate line is proximally shaded with brown. Hindwing of a pure white, on the margin and veins narrowly brownish. Brazil.

flaviorbis. **M. flaviorbis** Dgn. (39 b) is a small, dark red-brown species irrorated with grey, with double undulate transverse lines, the quadrangular orange-yellow ring-macula is surrounded with black, the dark-centred reniform macula exhibits above 2 white dots and proximally a white and black concave border-streak; undulate line yellowish, behind it white marginal dots. Hindwing light brown, at the margin darker. South-Eastern Peru.

cohaerens. **M. cohaerens** Schs. (42 d). Forewing pinkish-yellowish with an oblique white stripe from the centre of the costal margin to the anal angle, at the cell-end bordered with a metallic steel-grey colour being the base of a steel-grey triangular line, the whole distal area behind the white line is velvety brown with a white line

before the apex; transverse lines absent except an irregular middle line, which is proximally on the veins scaled grey, and a fine black basal line; at the margin the lower median branch is striped grey. Hindwing thinly scaled, brown, at the margin somewhat darker. Expanse of wings: 17 mm. Costa Rica.

M. callopistrica *Hmps.* (39 b). Forewing red-brown, strewn with black, with light veins in the median area, black transverse lines being on the averted sides bordered with ochreous-brownish, the ochreous-reddish maculae with white rings, the ring-macula above open. V-shaped, the reniform macula proximally produced on the median, the upper bordering of the coniform macula being a white oblique streak; the light reddish, proximally black-shaded undulate line extends in the centre very far towards the margin. Hindwing dark brown. Venezuela, British Guiana. *callopistrica*.

M. malaca *Schs.* (42 c) is allied to the preceding; forewing brown, irrorated with lilac, with 2 velvety black spots in the basal area, light brown transverse lines with darker borders, the posterior line interrupted on the veins; between the lilac-grey maculae being bordered with yellowish-red, the ground of the cell is darkened by brown, the proximal border of the ring-macula extends as an oblique line to the posterior transverse line which it reaches on the submedian fold; undulate line feeble, dark. Hindwing blackish-brown. Expanse of wings: 25 mm. Costa Rica. *malaca*.

M. acaste *H.-Schäff.* (39 b) is a larger, blackish-brown species, the forewing being irrorated with white, particularly in the basal area, and with strong white transverse lines, before and behind the distal line with white streaks in the hindmarginal area; the veins of the median area are white-striped, and the maculae surrounded with white; the reniform macula is strangulated, behind it there are white streaks to the postmedian line; the white undulate line is only present in the anal part. Hindwing greyish-brown. Venezuela, Peru. *acaste*.

M. langia *Drc.* Forewing dark brown with black transverse lines which are on both sides bordered with white, and a white hindmarginal portion of the median area, the maculae surrounded with white, the ring-macula triangular; an oblique white apical streak extends to the angle of the posterior transverse line. Hindwing brown, at the margin darker. Expanse of wings: 24 mm. Panama. *langia*.

M. bastula *Schs.* (39 b) has red-brown forewings with indistinct transverse lines edged with whitish, the posterior double line being filled up with white, the black-centred maculae with whitish rings, the reniform macula above with 2 white dots; the indistinct lighter undulate line is proximally shaded with a brownish grey. Hindwing dark coppery brown with whitish fringes, in the ♀ still darker. Brazil. — var. **peruana** *Strd.* (= ab. ♂ *Hmps.*) which may rather be a distinct species, has white hindwings with a dark central spot and a brownish-grey margin. Peru. *bastula*, *peruana*.

M. tenebrosa *Dgn.* (39 c) has a red-brown forewing irrorated with grey and dark brown, the darkest before and behind the median area, with double transverse lines being at the costal margin filled up with whitish, and darker maculae, from the reniform macula a black streak extends to the posterior transverse line, behind which there are white vein-dots; before the indistinctly lighter undulate line there are minute black sagittae. Hindwing reddish blackish-brown. Peru. *tenebrosa*.

M. stygiata *Hmps.* (39 c) is somewhat similar to *tenebrosa*, but the forewing is more greyish-brown, the anterior transverse line double, filled up with grey, the posterior line single, distally bordered with white, behind it black vein-streaks; on the middle radial branch with a black streak to the undulate line. Hindwing greyish-brown, on the margin darker. Paraguay. *stygiata*.

M. haemassa *Hmps.* (39 c) is on the forewing grey, irrorated with purple reddish, with very fine punctiform transverse lines and finely lighter ringed maculae, the reniform macula surrounded with black dots; behind the indistinct brown undulate line there are white vein-dots. Hindwing light reddish-brown. Cuba. *haemassa*.

M. miochroa *Jones* (39 c). Forewing dark greyish-brown with a double lighter filled anterior transverse line and a single, distally white-edged posterior transverse line, the latter with white vein-dots behind it; the narrow red-brown ring-macula is on both sides bordered by strong black streaks, the reniform macula is little visible; before the light undulate line dark shading. Hindwing light brown with a dark central spot. Brazil. *miochroa*.

M. grata *Hbn.* (= *rasilis* *Morr.*, *subusta* *Drc.*) (39 c). Forewing red-brown, strewn with grey and blackish, with finely darker striped veins, the anterior double transverse line filled up with white, the posterior single line distally bordered with white, the black-centred maculae with white rings, the reniform macula centrally very much strangulated, between both with a faded middle line; the light undulate line is proximally shaded with dark. Hindwing yellowish-white, at the margin brownish. From the United States (Maryland, Florida, Mississippi, Kansas, Texas), Mexico, and Panama. — Larva dark brown with a narrow white dorsal line, a black undulate lateral line, and a white spot laterally on the 5th ring and a brown one on the 6th ring. *grata*.

M. stenonephra *Hmps.* (= *concisa* *Drc.* nec *Wkr.*) (39 c). Forewing greyish-brown, in the marginal area more reddish with indistinct double transverse lines filled up with greyish-white, the small darker centred maculae with lighter rings; undulate line indistinct, whitish. Hindwing whitish, on the veins and margin feebly brownish. Mexico and in St. Vincent. *stenonephra*.

- lentilinea*. **M. lentilinea** *Hmps.* (39 c) is smaller than the preceding, lighter, with single transverse lines, on the averted sides bordered with white, behind the distal line with vein-dots, the undulate line whitish, proximally shaded with brown. Hindwing whitish, at the margin brownish. Brazil and Paraguay.
- targa*. **M. targa** *Schs.* (39 c) differs from the preceding in the purely white semi-transparent hindwing. Forewing on the violettish-white ground irrorated with brown and strewn with a darker colour, with double brown transverse lines filled up with white, the reniform macula surrounded with white, without a ring-macula; a red-brown central shadow is present. the white undulate line is straight. Brazil, Paraguay, Argentina.
- atrisigna*. **M. atrisigna** *Hmps.* (39 d). Forewing on the white ground densely strewn with coppery brown, and irrorated with coppery brown in the marginal area; the anterior transverse line is interrupted, indistinctly double, the posterior line white proximally bordered with brown; between the small, brown-centred maculae with white rings there is a black spot in the cell; undulate line whitish. Hindwing white with a brown marginal band. Argentina.
- jonea*. **M. jonea** *Schs.* (39 d) is one of the largest species, the white ground of the forewing is strewn with brownish-grey, in the basal and marginal areas irrorated with brown; transverse lines double, filled up with whitish, the white maculae surrounded with black and with brown centres, between them a thick brown central shadow and below with a faded black submedian stripe; undulate line indistinct whitish. Hindwing white, at the margin brownish. Brazil. — In ab. **castronis** *Strd.* (= ab. 1 *Hmps.*) the black submedian stripe is absent and the central shadow is replaced by 2 narrow streaks. In the ♀ the basal and marginal areas are darker. Castro (Paraná).
- editha*. **M. editha** *Schs.* (39 d). Forewing white, densely strewn with coppery brown, with fine white veins, double transverse lines filled up with white, and brown-centred maculae with white rings; the straight white undulate line is proximally shaded with brown. Hindwing of a pure white, in the ♀ brownish. Brazil.
- lithodia*. **M. lithodia** *Schs.* (39 d) is a smaller whitish species being in some places irrorated with coppery brown, with dark double transverse lines filled up with whitish; of the ring-maculae only the distal border is visible. the reniform macula is a whitish spot being proximally and below bordered with black; the white marginal area behind the undulate line is irrorated with grey. Hindwing brownish-grey. Brazil and Trinidad.
- thionaris*. **M. thionaris** *Schs.* (39 d) has coppery-brown forewings with double blackish transverse lines, the posterior line towards the costal margin filled up with white, the maculae incompletely bordered with black, the reniform macula with white dots above and below; a bent blackish middle line is distally accompanied by a brown band; the undulate line is composed of reddish and white lunulae being proximally bordered with black. Hindwing coppery brown. Brazil.
- ligata*. **M. ligata** *Mschlr.*, which is doubtfully placed hereto, has a wood-coloured brown forewing, being yellowish-brown at the hind-margin and in a broad postmedian band which extends in 2 broad stripes towards the margin and is interrupted below the centre and darkened by brown longitudinal streaks; transverse lines indistinct, the anterior line yellow, forming high bows, the posterior line brown; maculae obsolete, reniform macula distally with 2 small white spots; the undulate line is tight, forming 2 strong bows and being proximally bordered with dark brown. Hindwing diaphanous whitish, on the veins and margin brownish. Expanse of wings: 25 mm. Portorico.
- isse*. **M. isse** *Schs.* (42 d) has brown forewings, before and behind the median area mixed with white, the anterior line fine brown, on both sides broadly bordered with white, before it below the cell a black spot, the posterior transverse line white, finely bordered with brown; the oblique white reniform macula is irrorated with light brown, distally bordered with dark brown; the postmedian area is of a purer white, below the costal margin dark brown; the white undulate line is proximally shaded with brown, distally with silvery grey. Hindwing whitish, at the margin brownish-grey. Surinam.
- lithotela*. **M. lithotela** *Dyar* (42 d). Forewing blackish-brown, the transverse lines indicated by rows of white dots; through the cell extends a long spindle-shaped olive-yellowish diffuse spot separating the two largest white dots of the postmedian line; the undulate line is an irregularly broken olive shadow. Hindwing black. Expanse of wings: 17 mm. Panama.
- ipsidomo*. **M. ipsidomo** *Dyar* (42 d) has light lilac-grey forewings with a brownish-black median area obliquely extending to the apex, at the costal margin interrupted by a large white-dusted spot in which the narrow light reniform macula is situate, behind it in the dark ground a black streak, a similar one in the dark-shaded basal area below the median; undulate line light. Hindwing brownish-black. Panama.
- virescens*. **M. virescens** *Schs.* (39 d). Forewing yellowish-green, in the median area whitish, irrorated with red-brown, the same in the marginal area except the extreme distal margin, with fine black transverse lines, the posterior line towards the costal margin distally bordered with white; the ring-macula is absent, the reniform macula is composed of 2 small black spots; the apex is parted by white. Hindwing reddish-brown. Brazil.
- stenelea*. **M. stenelea** *Schs.* (39 e) is a very small insect with narrow wings, with dark brown, apically red-brown forewings, with whitish, partly incomplete transverse lines; the narrow oblique reniform macula is laterally bordered with black, the ring-macula is absent; hindwing red-brown. Brazil.

M. ixion Schs. (42 d). Forewing as far as the centre and behind it at the costal margin as far as the *ixion*. postmedian line white, here confluent with the white reniform macula, costal margin and basal area spotted brownish; transverse lines fine brown, the posterior line bordered with greyish-white, distal portion brown, defined by a black line; undulate line white. Hindwing dark greyish-brown. French Guiana.

M. costipuncta Schs. (39 c). Forewing on the grey ground irrorated with olive-green, before the centre *costipuncta*. darkened by a greyish brown, and with black-striped veins of the marginal area; anterior transverse line double, filled up with white, the single posterior line distally bordered with white; the small grey maculae with white rings are separated by a black costal-marginal spot which is continued as a streak beneath the reniform macula; the light undulate line is proximally irrorated with fiery red, behind it analwards a black spot. Hindwing light brown. Brazil.

M. ditrigona Jones (39 d). Forewing on the silvery white ground irrorated with reddish-brown, easily *ditrigona*. recognizable by 2 large black triangular spots at the costal margin; transverse lines indistinct, the posterior line double, maculae very finely surrounded with black; a whitish undulate line is only indicated. Hindwing of a pure white. Brazil.

M. bucephalina Mab. (39 e) has brownish-black forewings irrorated with grey, in the apical half *bucephalina*. obliquely cut off reddish-yellow, with a triangular greyish-white costal-marginal spot therein; the transverse lines are black, obsolete, submedianly connected; in the marginal area there are single black streaks. Hindwing yellowish-white, at the anal angle darker. Described from Patagonia.

M. statimacula Mschr. We append here the diagnoses of two uncertain species which may belong *statimacula*. hereto; they have been described as *Hadena*; *statimacula* has a lustrous yellowish-brown forewing which is violettish-brown in the median area and at the margin, with dark brown transverse lines forming 3 bows, the posterior line being distally bordered with a light yellowish brown, with black and white vein-dots behind it; the dark brown undulate line is distally bordered with yellowish and projects centrally towards the margin. The large white reniform macula is irrorated with brown and yellow, so that only a streak remains purely white; hindwing whitish-yellow, at the margin brownish-grey. Expanse of wings: 24 to 26 mm. Surinam.

M. regressa Mschr. is of the same size as the preceding; bark-coloured brown with a golden brown *regressa*. lustre, in the median area and at the inner angle mixed with golden yellow, the transverse lines being blackish, the anterior line composed of small lunular spots, distally yellowish-brown, towards the costal margin bordered with white, the posterior line being indistinct, the blackish-brown subterminal area is distally bordered by the light yellowish-brown undulate line, above with small black spots behind it; the quadrangular ring-macula is dark, surrounded with white, the large oval reniform macula is white, except two small spots it is irrorated with yellowish-grey and surrounded with dark brown. Hindwing lustrous dingy grey, at the margin brownish. Expanse of wings: 23,6 mm. Surinam.

96. Genus: **Neomilichia** Hmps.

Separated from the preceding genus merely by a slight rounded frontal projection with a horny plate below it. Only 2 species:

N. caternaulti Gn. (= *fervens* Wkr., *dentilineata* Btlr.) (39 e). Forewing purple brown, strewn with grey. *caternaulti*. with indistinct double transverse lines filled up with grey, the maculae surrounded with a scarcely darker colour, the reniform macula with a reddish centre, darkened by the median shadow passing through it; undulate line proximally bordered with a feebly darker colour; hindwing white with a brown marginal band, in the ♀ quite brown. Venezuela to Brazil. — In ab. **fusca** Btlr. the reniform macula has a comma-shaped white centre. *fusca*.

N. hylea Cr. (39 e) is a pretty, yellow species strewn with red, with red-brown faded transverse *hylea*. bands, red maculae with yellow rings, with a white streak below at the reniform macula; the dentate transverse lines are brown. Hindwing white, at the margin brownish. Guiana to Brazil.

97. Genus: **Leioselia** Schs.

Very near to the genus *Monodes*, only distinguished by the entirely tuftless thorax and abdomen. Probably the closely allied *Mon. marmorata* Schs. belongs to the same genus.

L. egregia Schs. (42 d). Forewing at the base, in the centre of the costal margin, in some places in and *egregia*. below the cell, at the hind-margin and distal margin green, otherwise lilac, with a large lighter, white-edged submedian spot in the basal area; the transverse lines are blackish-brown, interrupted, the posterior line spotted, before the green narrow reniform macula, which is surrounded with white, with a bent brown median shadow; the white undulate line terminates into the white, green-strewn apex. Hindwing lilac-brown. Expanse of wings: 29 mm. Costa Rica.

98. Genus: **Procrateria** Hmps.

This genus being otherwise only represented in the African region has only recently become known from America by one species with much shorter palpi than the preceding, and a large truncate conical projection on the frons with raised edges and a horny plate under it.

melanoleuca. **P. melanoleuca** *Hmps.* (39 e) is an easily recognized insect with a white forewing irrorated with brown, with a red-brown apex, before the white-edged anterior transverse line with a black shortened band; the shortened posterior transverse line is connected with the anterior line, enclosing a triangular area which encloses the white-ringed ring-macula; undulate line white. Hindwing white, at the margin brownish. Peru.

99. Genus: **Xylomoea** *Stgr.*

Here the palpi are quite short, roughly scaled; the frons exhibits a rough projection. The thorax is clad with scales, in front and behind with loose tufts, the abdomen as in the preceding with but one basal tuft. 4 American species are known.

laetrina. **X. laetrina** *Drc.* (39 e). Forewing greyish-brown with a coppery lustre with black transverse lines, the anterior line bordered with whitish-grey, the posterior line being double, at the costal margin white-spotted, strongly dentate with white vein-dots behind it; the maculae have light reddish centres, the reniform macula is surrounded by single white dots; in a light apical patch there are black streaks, below which the whitish dentate undulate line is. Hindwing coppery brown. Mexico.

didonea. **X. didonea** *Sm.* (39 e). Forewing greyish-brown, below the cell and from there to the margin irrorated with reddish-brown, with dark transverse lines being on the averted sides bordered with white, the maculae surrounded with whitish, the veins behind the cell are white-striped; the whitish undulate line forms a W below the centre. Hindwing light brown. Colorado, California. — Mr. BARNES and Mr. BENJAMIN had the kindness to send the original diagnose of a form which has not yet been published: „The subspecies from Utah is generally smaller, lighter and greyer than the typical Colorado-form and may be published as **draudti** *Barnes & Benj.* (ined.) (39 f). Holotype ♂, allotype ♀, 5 ♂♂ 6 ♀♀ paratypes; Eureka, Utah (Spalding) in the Coll. BARNES. Signed as responsible for the denomination and description by WM. BARNES and F. H. BENJAMIN, Decatur, Ill.“

chagnoni. **X. chagnoni** *B. & McD.* (39 f) is somewhat similar to the preceding, but the frons is much less projecting. Forewing ferruginous brown, the marking rather indistinct, the transverse lines submedianly connected by a black streak, both lines not bordered with white, the anterior line double; veins of marginal area somewhat lighter striped; maculae very feebly marked. Hindwing light yellowish, at the margin brownish. Expanse of wings: 30 mm. Canada (Quebec).

staticis. **X. staticis** *Dyar* has a dark loam-coloured grey forewing, at the costal margin and basal area shaded with brown, with straight brown transverse lines, the anterior line sharply angled at the median; the ring-macula is a black dot, the reniform macula is composed of 2 rings being connected by a streak; the broad brown median shadow touches beneath the postmedian line; the undulate subterminal line is brown, the margin is white with a black-dotted base of the fringe. Hindwing brown, towards the base lighter. Expanse of wings: 24 mm. Mexico (Sinaloa).

100. Genus: **Ruacodes** *Hmps.*

Of the same structure as *Procrateria*, but the conical frontal projection exhibits within the raised edge another flattened vertically placed projection; the last palpal joint is shorter and obtuser than there. But one American species is known.

tela. **R. tela** *Sm.* (39 f). The grey forewing is thickly strewn with blackish-brown and in the proximal and marginal areas irrorated with olive, here with darker striped veins; the dentate transverse lines are double, the posterior line distally bordered with grey, both connected by a prolongation of the reniform macula, the upper maculae with light rings, the reniform macula strangulated; before the white dentate undulate line there are small black sagittae. Hindwing whitish, at the margin greyish-brown. Arizona.

101. Genus: **Paramiana** *B. u. Benj.*

Of the same structure as *Neomilichia*, but stouter and with much shorter palpi which are in front hairy, not scaled. The frontal projection is somewhat stronger. The genus was only very recently established, as the species *niama* *Dyar* belonging to the genus *Amiana* *Dyar* belongs to the *Erastrinae*, and in the authors' opinion the following also belong to it: *Cerma marina* *Sm.* (p. 30), *Trachea smaragdina* *Neum.* (p. 213), and *Cerma canoa* *Barnes* (p. 30).

laetabilis. **P. laetabilis** *Sm.* (39 g). Forewing in the basal area and postmedianly light blue, very quickly fading into white, in the median area black, irrorated with grey, in the narrow marginal area black mixed with white, the dark median area defined by the dentate transverse lines, the maculae in it with whitish rings. Hindwing white, at the margin smoky. New Mexico.

P. contrasta B. & McD. (39 f) exhibits just the contrary colouring, the middle area being white *contrasta*, and the basal and marginal areas deep brown with double dentate transverse lines, the black-centred maculae surrounded with black, between them a brown costal-marginal spot extends down; hindwing yellowish-brown, at the margin smoke-brown. Arizona.

P. endopolia Dyar (39 g) is extremely similar to *contrasta*, but according to the kind information *endopolia*, by Mr. SCHAU who compared the type with the preceding, it differs in its larger size, and the white colour does not extend postmedianly beyond the submedian fold, above the reniform macula there is at the costal margin only one white dot, in *contrasta* there are two. Mexico.

102. Genus: **Namangana** Stgr.

This genus not having been quite satisfactorily grouped unites not quite homogeneous species, which were inserted here owing to the lack of distinctive marks. Proboscis developed, palpi erect, the 2nd joint in front scaled, the last joint short, porrect; frons smooth, thorax covered with scales, in front and behind with loose tufts, the abdomen only with a small tuft on the first ring. Antennae of a very different structure. The genus is chiefly distributed in the north of America, but also represented in Mexico and farther down to the south.

N. licentiosa Sm. has ash-grey forewings irrorated with brown, with rather indistinct and interrupted *licentiosa*, markings, of the transverse lines the anterior line is double, the posterior line on the veins prolonged into streaks; the large maculae are strewn with white, not marked; the light undulate line is on both sides bordered with blackish; hindwing white, at the margin brownish, in the ♀ with a broader marginal band. The ♂ antennae are very long-combed. From Utah.

N. costa B. & Benj. (39 f) is allied to the following; the whitish ground of the forewing is irrorated *costa*, with brown, and in the whole costal half as far as below the cell darkened by blackish-brown like the collar and shoulder-covers, too; the single transverse lines are somewhat lighter scaled on the averted sides, the maculae quite indistinct; undulate line scarcely lighter. Hindwing diaphanous white, in the distal half smoky. Expanse of wings: 29 to 31 mm. Arizona.

N. continens Edw. (39 g). Forewing yellowish red-brown, in the central area irrorated with black, *continens*, with black single transverse lines, the anterior line strong, removed far into the centre, the posterior line distally white-edged; of the maculae only the small white, black-centred reniform macula is present; undulate line proximally shaded with brownish. Hindwing white, at the margin narrowly brownish, in the ♀ quite brown, here also the forewing is darker. Arizona.

., **N. seitzii** Barnes & Benj. (*ined.*) (39 g), allied to *continens*, somewhat larger, forewing as in *suffusa*, *seitzii*, but the black irroration of the central area very much reduced. Hindwing diaphanous white, only the ends of the veins and a fine marginal line are blackish-brown. Holotype ♂, 1 paratype ♂, Huachuca Mts., allotype ♀ So. Arizona in the Coll. BARNES. Responsible for the denomination and description, signed by WM. BARNES and F. H. BENJAMIN, Decatur, Ill."

N. tapeta Sm. (39 h) originally described as *Oligia* and partly taken to be a form of *continens*, separated *tapeta*, by different, less densely scaled and more slender palpi; forewing yellowish red-brown, with single, black transverse lines, the posterior line distally bordered with yellowish; the upper maculae are whitish, the ring-macula is punctiform, the reniform macula is brown-centred, at the hind-margin in the central area a dark spot, behind the yellowish undulate line the veins are striped yellowish. Hindwing white, the veins and margin brownish. Florida.

N. suffusa B. & McD. (39 g, h) is very similar to a light form of *continens*, but the quite different *suffusa*, genitals prove it to be a distinct species; separated by its much more intensely irrorated exterior, the more irregular course of the anterior transverse line and the narrower middle area at the hind-margin; the hindwing has a much broader dark marginal band. Arizona. — The form **rubida** B. & McD. (39 h) is on the forewing *rubida*, deeper red, less intermixed with ochreous scales, the anterior transverse line has a more regular course, and the reniform macula is more distinctly prominent owing to its being more intensely white-scaled. California.

N. perolivalis B. & McD. (39 h) is on the forewing olive-green, densely strewn with white and *perolivalis*, black, with irregularly dentate single transverse lines, being the lightest before the anterior line; the reniform macula is large, irrorated with white, the light undulate line proximally irrorated with black. Hindwing diaphanous white, at the margin broadly smoky. Arizona.

N. viridescens B. & McD. (39 i). Anterior body and forewing brown mixed with emerald-green, *viridescens*, with double, green-filled transverse lines, the maculae filled with green and only partly surrounded with green, the very large coniform macula above and below open, filled up with dark and surrounded with green; the whitish undulate line is proximally bordered with broad green crescents, the marginal area behind it green with brown veins. Hindwing yellowish-brown. Arizona, September.

- niveirena*. **N. niveirena** Harv. (= *pohono* Sm.) (39 i). Forewing grey, irrorated with brown and strewn with black, at the costal margin blackened, with strong black transverse lines and a narrow, white-ringed reniform macula; the whitish undulate line is proximally shaded with black. Hindwing greyish-brown. Canada to California (cf. footnote p. 183).
- albimacula*. **N. albimacula** B. & McD. (39 i) is closely allied to *perolivalis*; forewing brown with a slight olive tint, strewn with black, with dentate black transverse lines being bordered with whitish on the averted sides, easily recognized by the prominent white reniform macula with a dark central lunula; ring-macula small, with a yellowish centre, often quite obsolete. Hindwing yellowish with a broad greyish-brown marginal band. From Utah and California.
- texana*. **N. texana** Sm. (39 i). Forewing yellowish-grey, irrorated with brown and strewn with black, in the postmedian area lighter, with single black transverse lines, and the maculae with yellowish rings and surrounded by an intense black colour, the reniform macula somewhat inwardly produced on the median, between both with a black middle line; the small yellowish-white subterminal spots are proximally accompanied by small black sagittae. Hindwing white, on the veins and margin brownish. Texas. — The form **consors** Sm. (39 k) is the race from Arizona, separated even by slight genital differences, although the other marks stated, such as its smaller size and black filling of the cell, do not stand the test in large series.
- variabilis*. **N. variabilis** B. & McD. (39 k) is closely allied to the preceding and may only be a geographical race of them; ground-colour most variable, from yellowish-brown to deep purple brown, mostly red-brown with generally very indistinct markings, single black transverse lines, the maculae surrounded with a slightly darker colour, the reniform macula below generally filled up with black; the light undulate line is proximally shaded with purple blackish. Hindwing diaphanous with a broad smoky marginal band. California.
- epipaschia*. **N. epipaschia** Grt. (39 k), described as a *Homohadena*, belongs as a form to the following species. Forewing loamy-grey, irrorated with black, with single black transverse lines, the anterior line very strong, submedianly connected by a black longitudinal shadow; between the light brownish-grey, unmarked maculae the cell is blackened; the light undulate line is dentate with small dark spots behind it. Hindwing brownish-black. Expanse of wings: 30 mm. New Mexico.
- praeacuta*. **N. praeacuta** Sm. (39 k). Forewing brownish-grey, strewn with black, with single strong black transverse lines, the maculae surrounded with black, the ring-macula oblique, above open and below pointed, the reniform macula with a brown centre, between both a brown middle shadow; a lighter undulate line is only indicated. Hindwing greyish-brown. Colorado. — „subsp. **nigramacula** B. & Benj. (*ined.*) (39 k) is similar to the type, but the basal area intensely strewn with black. Holotype ♀ and 2 ♀♀ paratypes, Shasta Retreat Siskiyou Co., Calif. in the Coll. BARNES. Responsible for the denomination and description, signed by WM. BARNES and F. H. BENJAMIN, Decatur, Ill.“ — „subsp. **orae** B. & Benj. (*ined.*) (39 k), similar to the type, but separated by the thorax and forewing being profusely irrorated with reddish-brown. Holotype ♂ and 1 ♂ paratype, Friday Harbour, San Juan Island Wash., in the Coll. BARNES; allotype ♀ Victoria, B. C. in the Coll. E. H. BLACKMORE. Responsible for the denomination and description, signed by WM. BARNES and F. H. BENJAMIN, Decatur, Ill.“
- leucorena*. **N. leucorena** Sm. (40 a) has greyish-white forewings irrorated with a light reddish brown, with indistinct lighter transverse lines, the posterior line broken up into vein-dots with lighter ones behind them; the reniform macula is an indistinct white streak, proximally darker scaled, the undulate line proximally darker shaded. Hindwing yellowish-brown. California, Arizona.
- andrena*. **N. andrena** Sm. (40 a), described as *Perigea*, is very closely allied to *leucorena*, but it has serrate, long-ciliated antennae, whilst in *leucorena* they are plain with very short cilia. Forewing lustrous dark smoky-grey with the same markings; the irregular lighter undulate line has a yellowish tint; the small round ring-macula with a yellowish ring is more distinct. California.
- revellata*. **N. revellata** B. & Benj. (40 a) is likewise very similar to the two preceding species, the undulate line is lighter and parallel to the distal margin; the yellowish-brown forewing appears grey owing to its being strewn with black, the markings are but slightly darker than the ground and often quite obsolete, the anterior transverse line more or less double, the ring-macula U-shaped, with a lighter ring, the reniform macula below on the median white-scaled. Expanse of wings: 32 to 37 mm. Arizona. The antennae are intermediary between the two preceding species.
- morsa*. **N. morsa** Sm. (40 a) is very much like a brownish-grey *Perigea sutor*, with punctiform transverse lines, the posterior line being double; the lighter maculae are unmarked, the reniform macula is strangulated; the light undulate line is proximally shaded with blackish. Hindwing whitish, at the margin brownish, in the ♀ quite brown. Expanse of wings: 25 to 28 mm. Texas.
- begallo*. **N. begallo** Barnes (40 a, b). Forewing on the reddish-brown ground thickly irrorated and strewn with blackish-brown, without anterior transverse line, of the posterior line only dentate traces are noticeable; the ring-macula is a small light, centrally black-dotted spot, the reniform macula particularly below strewn

with white and bordered with less black scales; undulate line absent. Hindwing white, at the margin feebly brownish. ♂ antennae finely serrate. Arizona.

N. ignota B. & Benj. (40 b) is very closely allied to *begallo*, but the antennae are plainly ciliary, *ignota*, in *begallo* serrate and set with eiliary tufts, not plain as HAMPSON states by mistake. Forewing monotonously yellowish-white with a brown tint, all the markings effaced or quite extinct, only the reniform macula indicated by a feeble lighter spot at the lower cell-end, the posterior transverse line, as far as it is visible on the veins extended into long dents, the veins of the marginal area are feebly darkened. Hindwing white. Expanse of wings: 25 to 26 mm. Texas.

N. egestis Sm. (= *abalas* Sm.) (40 b). Forewing reddish-brown, particularly in the costal-marginal *egestis*, region as far as below the cell more or less darkened, with darker striped veins; the transverse lines are rather indistinct, the anterior line punctiform, the posterior line with vein-streaks behind it; the maculae are absent or only marked by feeble whitish small spots, the undulate line is absent. Hindwing white, at the margin brownish. Arizona.

N. indecora Dgn. is a small insignificant species with drab forewings, with blackish-brown rather *indecora*, indistinct markings; the dentate transverse lines are double, the maculae are absent except a large round dark spot at the cell-end; subterminally there is a dentate shadow. Hindwing lighter grey with a large median spot beneath. Expanse of wings: 28 mm. Argentina.

N. variata Schs. (= *fea* Drc. part.) (40 b). Forewing greyish-brown, feebly strewn with a darker *variata*, colour, with single dark transverse lines, the maculae surrounded with brown, the reniform macula strangulated and below centred with blackish; between both there is a faded middle line; the lighter undulate line is proximally accompanied by a brown line. Hindwing whitish, at the margin brownish, in the ♀ quite brown. Mexico, Guatemala, Costa Rica.

N. charada Schs. (40 b) is a larger, lustrous brownish-grey species with lighter grey veins; the anterior *charada*, transverse line is double, brown, filled up with whitish, the posterior line single, distally bordered with whitish; the large maculae surrounded with light grey, the reniform macula is on the median somewhat inwardly produced. Hindwing greyish-brown. Mexico.

103. Genus: **Hypenopsis** Dyar.

This genus only contains 1 small species looking entirely like a *Hypenida*. It entirely corresponds with the diagnose of *Nolasodes* except that the palpi are still much longer, the wings being long and narrow. The second palpal joint is like a long thick vesicle, twice as long as the head, porrect, the last joint very long and slenderly erected. This and the following genus are without the accessory cell.

H. macula Drc. has light greyish-brown forewings with a somewhat darkened costal-marginal area *macula*, and a light oblique band from the apex to the hind-margin, and an undulate darker line along the distal margin. Hindwing yellowish-white, at the margin somewhat more intensely yellowish. From California to Brazil.

104. Genus: **Menopsimus** Dyar.

Extremely similar to the preceding as well as to *Nolasodes*, from both of which it only differs in the structure of the palpus, the 2nd joint not being vesicular but on the whole more slender, also somewhat shorter and in front with beard-like hair, the last joint not erect, but porrect. 2 small species have been described.

M. caducus Dyar (40 b). Forewing very light yellowish with a punctiform anterior transverse line, *caducus*, the dots of which are but rarely connected by a brownish line, the posterior line, quadrangularly comprising the cell-end, is distally bordered with a lighter colour; the reniform macula is a small blackish lunular spot; the light undulate line is proximally darker shaded. Hindwing smoky-grey. Expanse of wings: 12 to 13 mm. Pennsylvania. — **fractilinea** Sm. (40 c) is perhaps a distinct species, in BENJAMIN'S opinion, who compared *fractilinea*, the eotype. It is lighter, less strewn, the basal line is entirely absent, the undulate line less oblique, more parallel to the margin.

M. crambiformis Dyar (= *dubia* Schs.?) (42 e). Forewing deep brown with golden yellow transverse *crambiformis*, lines, both forming a sharp angle in the upper thirds, before the distal line there is here a lilac spot, behind it below accompanied by a lilac band; the costal margin is white-striped before the apex, before the margin there is a black, distally yellow line; the reniform macula is an oblique white spot. Hindwing brownish-grey. Expanse of wings: 12 mm. Panama.

105. Genus: **Carbona** Schs.

Proboscis well developed, the moderately long palpi are erect, the 2nd joint in front sealed, last joint straightly porrect. Thorax clad with hair intermixed with scales, in front and behind with loose tufts; the

abdomen exhibits at the base somewhat rough hairing, but no tufts.

obscura. **C. obscura** Schs. (40 c). Forewing coppery reddish-brown, almost in the whole hindmarginal part densely irrorated with blackish-brown, with double somewhat grey-filled transverse lines, the maculae being surrounded with blackish; the undulate line is indistinct, grey; hindwing dark brown. Mexico to Peru and Brazil.

cognata. **C. cognata** Schs. (42 e). Forewing of a bright brown, a little irrorated with lilac; the anterior transverse line is single, fine, black, the posterior line is composed of a double row of dots; the ring-macula is a white dot; the reniform macula is composed of 2 small dark spots above each other; in the dark distal margin there is a series of white marginal dots. Hindwing blackish-brown. Expanse of wings: 29 mm. Costa Rica.

lucens. **C. lucens** Schs. (42 e). Forewing pinkish-brown with a silky lustre, in the median area below the cell shaded with brownish-grey, with a still darker central shadow therein, bifurcating at the costal margin; transverse lines fine brown, the anterior line below the cell followed by a black undulate line, the posterior line by a dark brown shadow above the hind-margin; the small maculae are encircled with a darker colour; the undulate line is a dark brown shadow, behind it at the apex and anal angle there is a lighter, pinkish-brown region. Hindwing dark brown. Expanse of wings: 26 mm.

106. Genus: **Neostrotia** Hmps.

As the preceding, but the thorax is chiefly clad with scales, the metathorax exhibiting a flat tuft, whereas the prothorax and abdomen are tuftless. Four species described from South America.

nigripalpis. **N. nigripalpis** Schs. (40 c). Forewing whitish-yellow, in the basal and postmedian areas shaded with dark brown, in the marginal area more red-brown; instead of the maculae there is a dark spot on the cross-vein, the anterior transverse line is absent, the posterior line consists of a double row of red-brown spots; the undulate line is in the lower part white, in the centre dentate. Hindwing yellowish-white with a blackish central spot and a line behind it. Brazil.

mediopallens. **N. mediopallens** Hmps. Forewing red-brown, in the central area yellowish-white, edged by red-brown transverse lines, the anterior line being very indistinct, the posterior line double, filled up with yellowish; the maculae are small brownish-grey spots, the reniform macula with 2 black dots therein above each other; at the apex and anal angle there is one large yellow spot each, the undulate line consists between them of small yellow dots. Hindwing as in the preceding. Expanse of wings: 20 mm. Colombia.

malonia. **N. malonia** Schs. (40 c) has white forewings irrorated with red-brown, double transverse lines filled up with white, beginning at the costal margin with one black triangular spot each; instead of the reniform macula there is a minute blackish discal luna, from where a red-brown line runs to the hind-margin, and a white dentate undulate line proximally shaded with blackish. Hindwing light brown, similarly marked as in the preceding. Brazil.

albescens. **N. albescens** Schs. (42 e) is much smaller than the preceding, with white forewings marked yellowish-brown; transverse lines yellowish-brown, the anterior one more or less double, the central area encompassed by them is strewn with yellowish-brown, therein a black dot representing the ring-macula, and 2 representing the reniform macula; the undulate line only consists of a few small brownish-grey spots. Hindwing whitish-grey, at the margin darker. Expanse of wings: 12 mm. French Guiana.

107. Genus: **Colodes** Schs.

Allied to the following genus from which it differs in the absence of the prothoracal tuft, the other tufts being composed of long spatulate scales, the last palpal joint being shorter, the distal margin of the forewing not being concave; moreover, there are differences in the veins: on the forewing the two lower radial branches rise together from the lower cell-angle, whilst the middle subcostal branch is absent as well as the accessory cell. But one very small species:

selecta. **C. selecta** Schs. (42 e). Forewing dark green with blackish-brown transverse lines, both being bordered with white spots and dentate, the ring-macula with a white dot behind it, the reniform macula distally with a white lunar spot, proximally with a white dot, between both there is a median shadow; subterminal shadow broad, behind the cell accompanied by another shadow. Hindwing purple bronze-brown. Expanse of wings: 15 mm. French Guiana.

108. Genus: **Neomonodes** Hmps.

Proboscis entirely stunted, palpi erect, moderately long, in front scaled; the scaled thorax exhibits in front and behind loose tufts, the abdomen small tufts on the first rings. The genus only contains one slender species with a somewhat concave distal margin of the forewing below the centre; the accessory cell is absent,

the 3 lowest subeostal branches are forked, the two upper ones rising from the cell; the middle radial branch rises from above the lower cell-angle, the uppermost from below the upper cell-angle.

N. berthae Schs. (40 e). Forewing in the basal area yellowish-reddish, behind it and at the hind-margin *berthae*, greyish-brown, more or less mixed with white, the most intensely before the margin, with a pointedly notched anterior transverse line and an indistinct double posterior line, which are connected by black above the hind-margin; on the cross-vein there are 2 white dots; behind the transverse line which in its lower part is filled up with white, there is a faded white oblique band followed by the white undulate line, behind which the veins are striped white. Hindwing white, at the apex slightly irrorated with reddish-brown. Brazil.

109. Genus: **Nanamonodes** Hmps.

Separated from *Neomonodes* by the developed proboscis, the absence of the thoracal tufts, whereas those on the abdomen are present. Forewing long and narrow with a rounded apex, without the indentation, with only 3 subeostal branches, on the hindwing the upper median branch anastomoses with the lowest radial branch. 2 small South American species are known.

N. albilinea Hmps. has grey forewings irrorated with brown, strewn with black in the basal and marginal areas, with two white, black-sealed transverse lines, the anterior line being removed almost into the centre; in the lower cell-angle there is a black dot; outside there is yet a dark subterminal shadow. Hindwing greyish-brown. Expanse of wings: 14 mm. Venezuela.

N. trilineata Schs. (42 e). Forewing at the base blackish brownish-grey, behind it on the white ground *trilineata*, irrorated with yellowish-red, in the costal half dark grey with 3 blackish-brown transverse lines, the anterior of which is straight, the middle one in the cell proximally bordered with white, the posterior line distally as far as the reniform macula which is composed of a dark semicircle, the distal half of which circle is formed by the posterior transverse line; a darker subapical shadow. Hindwing grey, at the margin darker. Expanse of wings: 13 mm. French Guinea.

110. Genus: **Micromonodes** Hmps.

It has longer palpi than the preceding, the last joint being long and slender. Thorax and abdomen tuftless, or only on the metathorax with a flat small tuft. Smaller slender insects the wings of which exhibit almost the same venation as described in *Neomonodes*, except the uppermost radial branch of the forewing rising from the upper cell-angle.

M. mochensis Schs. (= *eassida* Dyar) (40 e). Forewing coppery red-brown, feebly irrorated with *mochensis*, blackish, at the base irrorated with whitish, behind it and at the margin tinted with a brownish grey, the anterior transverse line double, filled up with whitish, the posterior line single, distally bordered with white; the ring-macula is a black dot, the reniform macula a small spot, between both extends a faded blackish median line; undulate line indistinctly lighter. Hindwing reddish-brown with a central spot and postmedian line. Mexico.

M. leucosticta Schs. (42 f) has blackish-brown forewings with small lilac whitish, partly dark-edged *leucosticta*, spots being arranged as transverse lines, besides one at the base of the costal margin, 2 above each other forming the reniform macula, and some subterminal and marginal dots. Hindwing brownish-grey. Expanse of wings: 14 mm. French Guiana.

M. excellens Schs. (42 f). Forewing olive-brown, at the base, at the hind-margin and before the anterior *excellens*, transverse line dark brown, irrorated with white here, with darker brown, white-edged transverse lines, the posterior line being punctiform; near its upper end with a white broad stripe to the apex; the median area is in the disc of a brighter brown colour; before the margin there is a whitish subterminal shadow. Expanse of wings: 15 mm. French Guiana.

M. marita Schs. (40 e). The whitish forewing is irrorated with red-brown, in the proximal area lighter, *marita*, the transverse lines being bordered with whitish, the proximal one being indistinctly double, and to it a white, below black-striped oblique stripe extends from the apex; the maculae are small feeble yellowish-white spots, the reniform macula is brown-centred. Hindwing light brown. Brazil.

M. endotherma Dyar (42 f) has violettish-brown forewings with a bent brown line from the centre *endotherma*, of the costal margin to the distal third of the hind-margin, where there is in front of it a large ochreous-brown spot with a purple brown patch proximad; distally to the brown line there is a white line and between them the yellowish reniform macula; in the apex there is a purple spot, below it a brown interrupted streak, proximally below it a small yellow spot. Hindwing dark brownish-grey. Expanse of wings: 16 mm. Mexico.

M. semiluna Dgn. Forewing chestnut-brown, before and behind the centre darker with a large white *semiluna*, crescentiform spot in the cell-end, above distally above it another very small white spot. Hindwing somewhat lighter brown. Expanse of wings: 19 mm. Colombia.

guarama.

M. guarama Schs. (40 d). Forewing ochreous-reddish, strewn with a darker brown, with blackish dentate transverse lines, the posterior line being more indistinct and distally bordered with white, both being submedianly connected by a black streak; a blackish oblique streak parts the apex, before the whitish undulate line there is in the centre a black faded dentate spot. Hindwing light brownish. Brazil.

111. Genus: **Gortyna** O.

Proboscis developed; palpi obliquely rising with a short last joint; the frons is smooth, the head and thorax is clad with scales, in front and behind with loose tufts, the abdomen with a series of tufts on the first rings. The neurulation is normal. We mention here yet the more modern conception according to which the genus must be denominated *Helotropha* Led., because the name *Gortyna* was applied by HÜBNER, in 1822, for the only species: *micacea* Esp. and fixed in the same way by GROTE in 1895, for which reason this name must replace the former name *Hydroecia* Dup. — The larvae, as far as they are known, live in the stalks of water- or marsh-plants.

caduca.

G. caduca Grt. (40 c), as well as the following *retis*, has at the distal margin of the forewing on the upper median branch a slight projection and above it a very slight indentation. Forewing light red-brown, as far as the posterior transverse line densely irrorated with purple grey, being distally the darkest with blackish transverse lines and small red-brown maculae with lighter rings, the light undulate line being rather indistinct; hindwing brown. Canada; United Staates. Very rare.

retis.

G. retis Grt. (40 d) is somewhat similar to *caduca*, but the forewing is blackish-brown, suffused with violettish-grey, with lighter-striped veins, in the lower half before the margin white; the anterior transverse line is indistinctly double, the posterior line distally bordered with white; the small maculae with white rings, the undulate line also white. Hindwing brownish-grey, distally whitish. Massachusetts and Pennsylvania. Both species flying like *Erastrinae* may belong together as forms.

reniformis.

G. reniformis Grt. (40 d) has a normal shape of the wings and is somewhat like the European *leucostigma* (Vol. III, p. 223, pl. 46 a); forewing purple brown with double transverse lines more or less filled up with whitish, the maculae surrounded with whitish, the reniform macula distally with a small white luna, the yellowish undulate line distally bordered with reddish-brown. Hindwing light yellowish-brown, at the margin darker.

atra. — The form **atra** Grt. (40 d) has darker blackish-brown forewings with a bright, prominent white reniform macula. — ab. **insignata** Strd. (= ab. 2 *Hmps.*) is of a brighter brown, the metathoracal tuft is grey, the forewing in the central area irrorated with black, behind it whitish, the median and the branches rising from the lower cell-angle are white. A mostly common insect from Canada to the central parts of the United States.

112. Genus: **Apamea** O.

Separated from the preceding genus by the hair-shaped thoracal scales being intermixed with hair and by the centre of the collar being raised somewhat ridge-shaped. All the rest as in *Gortyna*, but the abdomen is also laterally somewhat hairy. Half a dozen of American species.

velata.

A. velata Wkr. (= serra G. & R.) (40 d). Forewing on the red-brown ground in the central and marginal areas irrorated with a darker colour, with double undulate transverse lines, the posterior lines very dehiscent with dark vein-dots behind them, the reddish-centred maculae with lighter grey rings; before the reddish undulate line there is darker brown shading. Hindwing greyish-brown, at the margin lighter. Canada to New York.

nictitans.
americana.

A. nictitans L. (40 d). This species having been dealt with in the palearctic part (Vol. III, p. 224) also occurs in America with a number of forms. The principal form **americana** Sp. (= *lusca* Sm., *atlantica* Sm.) (40 e) is on the forewing of a brighter orange-red, less irrorated with brown, only the central area being mostly defined by a slightly darker shade; the ring-macula is orange, the reniform macula likewise orange

interoceanica.
ca.
pacifica.

with white dots at the lower end. — **interoceanica** Sm. is of a browner ground-colour and originates more from West Canada, whereas **pacifica** Sm. (40 e), from California, exhibits a greyer colouring. — The range of the species extends from Canada to Colorado and California. Larva yellowish or reddish-grey with fine light grey longitudinal lines; it lives on grasses.

senilis.

A. senilis Sm. (40 e) has ochreous-yellowish forewings tinted with red-brown, with double darker, finely crenulate transverse lines, and the maculae also finely surrounded with red-brown, and the undulate line is also double. Hindwing somewhat more yellowish. Colorado, New Mexico. Utah.

flavostigma.

A. flavostigma B. & Benj. is allied to *senilis*, but the ground-colour is a dull brown hued with reddish, the markings are of a deeper red-brown colour and more distinct, the reniform macula is filled up with ochreous yellow. Hindwing light reddish-brown. Expanse of wings: 40 mm, New Mexico.

A. lunata Sm. (= *albilunata* Sm.) (40 e) is a small ochreous reddish species with whitish transverse *lunata*, lines and a white crescentiform reniform macula, the other maculae being absent; the veins of the central area are a little strewn with blackish; the undulate line is proximally shaded with dark, with internerval dots. Hindwing reddish-white, at the margin somewhat darker. California.

A. erepta Grt. (40 e) is on the forewing ochreous, strewn with reddish, with brown-striped veins *erepta*, and red-brown transverse lines; the ring-macula in a whitish ring is fadedly bordered with red-brown, the reniform macula is a white crescent surrounded by dark brown; the red-brown undulate line is very indistinct and interrupted. Hindwing light yellow, at the margin brownish. Kansas. — **ryensis** Bird (40 e) is of a variable *ryensis*, colouring, straw-coloured, more or less irrorated with a claret-colour and strewn with black; it chiefly differs in the absence of the ring-macula. Described from Rye, New York. — Larva diaphanous whitish, on each ring in front with a belt of purple brown colour, except the first and twelfth rings which turn paler with increasing growth. It lives on *Tripsacum dactyloides*.

113. Genus: **Achatodes** Gn.

Characterized by the absence of the proboscis, moderately long rising palpus with a short terminal joint, and a large hair-tuft on the frons, in the centre of which there is a horny pointed appendage; the thorax is clad with scales and hairs and exhibits a keel-shaped dorsal tuft of long scales; the abdominal tufts are large and besides there are lateral hair and a large anal tuft.

A. zae Harr. (= *sandix* Gn.) (40 f). Forewing grey, irrorated with red, in the costal half darkened *zae*, by brown, at the base, in the cell-end and at the apex scaled fiery-red, with darker striped veins, indistinct dentate transverse stripes, the anterior one being double, the posterior one distally bordered with grey, with a double row of dots behind it; the small maculae are centred with brown; the undulate line consists of small yellow, red-striped spots. Hindwing light greyish-brown, at the margin lighter. Canada to Florida and Colorado. — Larva whitish with large lustrous black tubercles and shields; it lives on elder (*Sambucus*), not on maize.

A. juanae Schs. (40 f) is darker red-brown, in the marginal area red-striped, with indistinct, finely *juanae*, crenulate transverse lines, the maculae surrounded with black, the reniform macula on the median somewhat proximally produced; the undulate line is composed of yellow dots. Hindwing much darker than in *zae*. Mexico.

A. metaleuca Dyar (40 f) looks very different: forewing quite light reddish-brown, at the apex with *metaleuca*, a white spot from which a brown submarginal line proceeds, parallel to the distal margin; all the markings are quite extinct except the large rounded whitish maculae. Hindwing white. Mexico.

114. Genus: **Xanthoecia** Hmps.

Very closely allied to the *Apamea*, but separated by a pointed horny projection on the frons, the palpi being somewhat more porrect; the prothorax exhibits a large tuft in the shape of a trilateral pyramid, and behind it a bipartite tuft; the tibiae are long-haired, the abdomen only shows a basal tuft. The apex of the forewing is pointedly produced. Beside the palearctic *X. flavago* but one American species is known.

X. buffaloensis Grt. (= *latia* Streck.) (40 f) is a large purple red-brown species, before and behind *buffaloensis*, the median area more purple grey, with darker striped veins, double transverse lines, the white maculae irrorated with yellow, the reniform macula in the centre with a curved yellow line edged with red, beneath divided into single small spots; the brown undulate line is dentate in the lower half. Hindwing yellowish, towards the margin irrorated with purple brown. United States (New York, Buffalo). — v. **simplicissima** Bird (40 g) has the maculae *simplicissima*, coloured like the ground. Delaware. — The larva is diaphanous whitish with black tubercles and lives on *Saururus cernuus*, in the creeping root-stock and in the lower parts of the stalks, frequently changing the plants very quickly.

115. Genus: **Hydroecia** Dup.

As has already been mentioned in *Gortyna*, the name *Gortyna* ought to be applied here. Very near to the preceding genus, but separated by the smooth frons and a loose, not parted tuft on the metathorax. Beside some palearctic species quite a number of American representatives have become known, the larvae of which also bore into the stalks and roots of mostly water-plants.

X. serrata Grt. (40 f) is in the male recognizable by the long-combed antennae. Forewing light red, *serrata*, in the basal area intermixed with whitish, with feeble red transverse lines, only the subbasal line being double

filled up with yellow; the large maculae are white, encircled and centred with red-brown, the reniform macula with a light yellow streak in the centre and below divided into white spots, the coniform macula parted by a red streak on the submedian fold; the indistinct undulate line is distally bordered with yellow. Hindwing yellowish-brown, towards the margin reddish. Colorado. — In the form **ochrimacula** B. & McD. (40 g) the maculae show ochreous instead of whitish colouring; it is probably a distinct species.

repleta. **H. repleta** Bird (40 g) is extremely similar to the preceding, but at once discernible by dull black hindwings with light reddish fringes; also the forewing has a darker tint, being more brown with red irroration, in the basal area extensively yellow, the two transverse lines are indistinctly double, partly filled up with yellow, the postmedian area irrorated with purple, at the margin yellow spots, a larger one at the apex. Expanse of wings: 34 to 36 mm. Arizona.

pallescent. **H. pallescens** Sm. (40 g). Here the antennae are very short-combed or rather strongly serrate. Forewing quite pale reddish, in the central area particularly towards the costal margin somewhat deeper coloured, with white transverse lines and whitish, little marked maculae, the coniform macula being indicated by a strong light stripe; the white undulate line is distally bordered with red-brown; hindwing yellowish-white. The ♀ is greyer. Canada to Oregon.

medialis. **H. medialis** Sm. (40 h) is very much like *pallescent* and is best recognized by the central area not being darker prominent and the very much less prominent coniform macula being merely a somewhat lighter streak. Hindwing slightly darker, more brownish. Expanse of wings: 48 mm. Washington, Colorado.

intermedia. **H. intermedia** B. & Benj. is likewise very similar, but the antennae are somewhat less strongly serrate, it is smaller, the colour as in *medialis*, the coniform macula better visible, almost as in *pallescent*, above and below defined by a fine darker line; the upper maculae are almost entirely extinct. Expanse of wings: 42 mm. Canada (British Columbia).

obliqua. **H. obliqua** Harv. is somewhat darker reddish-brown than the similar preceding species, in the central area irrorated with a darker colour except the costal portion, with brown transverse lines bordered with whitish on the averted sides, and large maculae marked brown; the whitish undulate line is proximally bordered with red-brown. Hindwing reddish-brown with a darker postmedian line. From Dakota and Arkansas to Colorado and California.

columbia. **H. columbia** B. & Benj. is smaller and with narrower wings than *medialis*, with less strongly serrate antennae; from the most similar *intermedia* likewise separated by the narrower shape of the wings and by the more oblique course of the posterior transverse line which is not broken on the lower median branch, whereas in *intermedia* it forms here an angle; the subterminal area is densely irrorated with grey, and the hindwing is much darker brownish-grey. Expanse of wings: 41 mm. British Columbia.

ximena. **H. ximena** B. & Benj. is externally recognizable by the more intense admixture of hair in the thoracal covering; larger and lighter than the similar *pallescent*, the antennal shaft is thicker, but the antennal teeth feebler and shorter. Forewing yellowish-white, feebly irrorated with red-brown, the transverse lines somewhat darker prominent, the coniform macula filled up with red-brown and surrounded with a darker colour, no lighter stripe, the ring-macula is filled up with yellowish-white, the reniform macula is hardly traceable. Hindwing yellowish-white, the veins hued with reddish-brown. Expanse of wings: 45 to 50 mm. California.

immanis. **H. immanis** Gn. (40 h) is the largest species, ochreous-brown, the central and marginal areas except the costal portion are irrorated with red-brown, with darker veins and darker red-brown transverse lines, the posterior line is distally bordered with a lighter colour, and with very large maculae; undulate line indistinctly double, filled up with a lighter yellowish. Hindwing yellowish red-brown. United States from New York to Colorado.

micacea. **H. micacea** Esp. has been dealt with in the palearctic part (Vol. III. p. 226) and figured there, and also occurs in Canada where it may have been imported. It differs from *immanis* at once in its smaller size and less strongly spined tarsi.

perobliqua. **H. perobliqua** Hmps. (40 g) is much smaller than all the preceding. The yellow ground is densely irrorated with red-brown, the long narrow forewing in the posterior half of the median area somewhat darkened with oblique dark transverse lines, the posterior line distally bordered with yellow, the maculae surrounded with brown. Hindwing yellowish-white. Canada.

stramentosa. **H. stramentosa** Gn. (= *diplocyba* Hmps.) (40 h) is a beautiful large light yellow species irrorated with a delicate olive-greenish colour, the costal-marginal area hued with purple reddish, with brown transverse lines, the maculae surrounded with brown, the ground between them somewhat darker, the reniform macula on the median somewhat proximally produced. Hindwing yellowish-white. From Canada to Illinois and Colorado.

juvenilis. **H. juvenilis** Grt. (40 i) and the following are unlike this genus, being very similar to the species of *Hydroeciodes*. Forewing on the yellow ground irrorated with brown, with red-brown transverse lines, the posterior line being crenulate and with a strong oblique median line; the yellow maculae are surrounded with red-brown; behind the undulate line there is darker irroration. Hindwing dark brown with yellow fringes. Kansas, Colorado, New Mexico.

H. arnymai Dyar (40 i). Forewing on the yellowish-red ground marked with red-brown, in the eentral *arnymai*. area strewn with brown, with red-brown transverse lines, the anterior one forming 3 bows, the posterior one being finely dentate, between them a dark median shadow, the light maculae embedded in a darker ground; the marginal area is densely irrorated with red-brown. Hindwing reddish-brown. Mexico.

116. Genus: **Rhodoeccia** Hmps.

Distinguished from the preeeding genus chiefly by the presenee of bent unguiform spines on the outside of the anterior tarsi; the only small species has a rounded apex of the forewing.

R. aurantiago Gn. (= *illiterata* Grt., *differta* Morr., *illinoisensis* French) (40 i). Forewing purple red, *aurantiago*. in the eentral area orange, at the margin irrorated with blaek, with blackish transverse lines, the posterior line dentate, the maculae hardly noticeeable. The ♀ is more reddish-yellow with more distinet maculae. Hindwing on the yellowish ground irrorated with earmine. New York to Florida.

117. Genus: **Pyrrhia** Hbn.

The only species from North America and doubtfully reported from Brazil has been deseribed in the Palearctie Part in Vol. III, p. 227. It differs from the other elosely allied genera by the thorax being purely elad with hair, with an insignifieant dorsal ridge. Cf. Vol. III, p. 227.

P. umbra Hfn. (40 i). Together with this type the form **exprimens** Wkr. (= *angulata* Grt.) (40 k) *umbra*. ooeurs, in which the postmedian and marginal areas are densely irrorated with red-brown; it ooeurs in Canada *exprimens*. and the United States. — Whether **cilisca** Gn. which was deseribed from Brazil and the type of which was in *cilisca*. OBERTHÜR's eolleetion, belongs to it, is still doubtful; it has lighter yellow hindwings and on the forewing a carmine postmedian band. — ab. **stilla** Grt. (40 k) has orange-red forewings, without any marking in the basal *stilla*. area and without maeulae, with an intense dark median shadow and bright red fringes. Western States: Colorado, Idaho, New Mexieo.

118. Genus: **Erythroecia** Hmps.

Here the frons exhibits a rounded projeetion with a horny plate below it; the thorax is only elad with hair and has no tufts. The abdomen as usually exhibits a tuft only on the first ring. Some pretty yellow and pink species have been deseribed.

E. suavis Edw. (40 i) has yellow forewings with pink transverse bands and small maeulae, as well *suavis*. as a red eostal margin. The greenish fringes are at the end pink. Hindwing yellowish-white, in the apieal marginal portion reddish-brown. Colorado, New Mexieo.

E. euposis Dyar (40 h) is larger than *suavis*, which is very similar, more intensely pink-spotted, with *euposis*. much larger maeulae, in the eentral area likewise spots; the posterior line is eomposed of 3 rows of partly eonfluent spots, also the marginal spots are larger; hindwing blaek with a whitish margin and fringes. Mexico (Tehuacan).

E. rhodophora Hmps. (42 i). Here the thorax is almost quite earmine, the rows of spots on the *rhodophora*. forewing are faded and flown together forming broad transverse bands, but the marginal spots very small. Hindwing yellowish, irrorated with blaekish-brown, with red veins and margin. Expanse of wings: 34 mm. Guatemala.

119. Genus: **Emboloeccia** Hmps.

Separated from the preeeding genus by a differently shaped frontal projeetion: a vertieally plaeced flattened horny projeetion, in front rounded off. Thorax elad with hair and hairlike seales, in front there is a long tuft turned hindward, on the metathorax a parted tuft. The abdomen exhibits some small tufts on the first rings. The only species was deseribed from California.

E. sauzalitae Grt. (= *erubeseens* Bsd.) (40 i). The yellow forewing is strewn with red-brown, before *sauzalitae*. and behind the eentral area and in the eell irrorated with purple brown, the veins finely striped brown, with darker, somewhat faded transverse lines, the posterior line double; the eoniform maeula and ring-maeula are white, the former bieuspid, parted by a yellow stripe, the latter small, eentred with brown; the reniform maeula is yellow, above with 2, below with 3 small white spots. Hindwing yellowish-white, irrorated with brown, with darker veins.

120. Genus: **Papaipema** Sm.

This genus, containing a very great number of species, is built exactly like the preceding genus, but it has a smooth frons; the collar has a slight ridge in the centre. It comprises beautiful insects of mostly more than medium size, the American „borers“, the life-history of which has been most perfectly cleared up by the unflagging researches of Mr. HENRY BIRD at Rye, being unparalleled in any other genus. He quite systematically investigated the process of life of the species mostly living in the interior of large herblike plants and published quite a number of fascinatingly written essays. Our own work he has besides supported by putting at our disposal a great number of important notices and a magnificent material for the plates, for which great kindness we herewith once more express our best thanks.

- cerina.* **P. cerina** Grt. (40 k). Forewing of a bright yellow, before and behind the central area and in the marginal area, except the apex, irrorated with purple red-brown, with red-brown transverse lines, the posterior line being single and dentate, and with red-brown maculae; undulate line yellow. Hindwing pale yellow with a reddish tint. United States (Maine, Kansas). — The young larva is purple brown with white longitudinal lines disappearing in the adult larva which is then diaphanous yellowish. It lives in the stalk of *Lilium superbum*.
- appassionata.* **P. appassionata** Harv. (= *horni* Strd.) (40 k) is a smaller species, on the yellow ground irrorated with a bright red-brown, towards the margin purple red with a fiery red apical spot; the double transverse lines are filled up with yellow; all the 3 maculae are white, the coniform macula double, the reniform macula divided into spots by the red-brown veins; hindwing on the yellow ground irrorated with red-brown except the margin. Canada. — The brown, white-striped larva lives in *Sarracenia*. The type of *horni* was taken in the Botanical Gardens of Marburg, where the larva had probably been imported with the root-stock of the foodplant.
- stenoscelis.* **P. stenoscelis** Dyar (41 b) is somewhat like the following, but smaller; forewing ochreous red-brown, with a purple tinge except the lower and distal half of the median area, with slightly curved double transverse lines and purely white, streak-shaped maculae. Hindwing ochreous-brownish. — Larva dull pinkish-red, transparent, with black tubercles, living on the fern *Woodwardia virginica* in the root-stock, which it leaves for the sake of pupation.
- inquaesita.* **P. inquaesita** Grt. (41 a) is allied to *stenoscelis*, but easily discernible by the strong, pointedly broken median line and the likewise angular double posterior transverse line; the colour is a brighter yellowish red, with yellow maculae. Eastern and Central States. — Larva dingy white with a light brown head, a neck-shield and anal shield; it lives beside the preceding larva on the fern *Onoclea sensibilis*.
- speciosissima.* **P. speciosissima** G. & R. (41 a) is likewise somewhat similar to *stenoscelis*, but much larger and of a bright yellowish red, with markings similar to those of *inquaesita*, and likewise pointedly broken median and posterior transverse lines; maculae narrow and white. Hindwing light yellowish-red. — Larva diaphanous reddish with a brown head, neck-shield and anal shield; it also lives on ferns: *Osmunda regalis*.
- marginidens.* **P. marginidens** Gn. (= *birdi* Dyar) (41 a). Forewing red-brown, towards the hind-margin somewhat more yellow, before and behind the median area irrorated with purple grey, with double transverse lines; the maculae and some spots in the basal area are white; the brown undulate line proceeds from a yellow apical spot. Hindwing on the yellowish-white ground irrorated with purple red. Northern, Eastern, and Central States. — The dingy white larva with large brown tubercles and shields lives in hemlock (*Cicuta maculata*) and in species of *Sium*.
- eryngii.* **P. eryngii** Bird (41 a) is more similar to the following species than to *marginidens*; forewing purple brown, in the central area chestnut-coloured, towards the hind-margin strewn with yellow, with rather indistinct darker transverse lines; the large maculae are white, the coniform macula as usual bipartite, the reniform macula divided into 7 single spots with a yellow central line, at the base there are some yellowish-white or purely white spots. Hindwing dull yellowish-red, with a greyish-brown tint. — The larva lives in the stalk and root-stock of *Eryngium aquaticum*; as in all the species the egg hibernates, the young larva creeps out in June, the imago developing from the end of September till the middle of October; larva light purple brownish, on the ventrum with a salmon-coloured tinge. From the prairies near Chicago.
- nephrasyntheta.* **P. nephrasyntheta** Dyar (41 b) is one of the very largest species, marked very much like *eryngii* though much lighter, more loam-coloured yellowish-grey, the central line in the large reniform macula is white, not yellow as otherwise usual. Hindwing reddish-white. Apparently only 2 ♀♀ are known so far. Maryland.
- nepheleptena.* **P. nepheleptena** Dyar (= *moeseri* Bird) (41 b). Forewing shorter and broader than usual, of a deep violetish brown, in the central area strewn with red, towards the hind-margin with yellow, before it, behind it and at the distal margin with a purple tint and a silky gloss, the basal spots small, yellow, the maculae as usual white, the reniform macula with a yellow central line; undulate line indicated by orange scales. Hindwing violetish-grey. — The adult larva is diaphanous whitish with brownish transverse belts on the rings 4 to 7, it lives in the stalk of *Chelone glabra* which it leaves for the pupation. Buffalo, New York.

P. furcata Sm. (41 b) is much smaller and still much lighter than *nepheleptena*, light yellow, irrorated *furcata*. with red-brown in a variable extent, the basal spots and maculae white as usual, the reniform macula with a yellow central streak. Hindwing quite light yellowish-white. New Hampshire, New York, New Jersey, Washington, Illinois. — Adult larva diaphanous whitish, tubercles and anal shield black, head yellowish-brown. It lives in the ends of the twigs of ash-trees (*Fraxinus nigra*, *americana*, *pennsylvanica*) and leaves the twig to go into the earth for pupation.

P. circumlucens Sm. (= *baptisiae* Bird) (41 b). Forewing yellowish-red, in the basal, costal-marginal *circum-* and distal-marginal areas irrorated with brown, with the usual double transverse lines, the anterior line at *lucens*. the costal margin filled up with white; basal spots and maculae white, smaller than in the other species, particularly the reniform macula. Hindwing yellowish-red, on the veins and margin irrorated with purple red. Massachusetts, New York. — Larva diaphanous dull pink with yellowish longitudinal lines, boring into the stalk and root-stock of *Apocynum androsaemifolium*, but it also goes on *Mesadenia tuberosa*, *Vernonia fasciculata*, and *Baptisia inctoria*.

P. humuli Bird (41 c) is extremely similar to *marginidens*, but the maculae are smaller, the basal *humuli*. area never white; ground-colour brick-reddish brown, without any contrasts, excepting the white maculae, only the postmedian area with a purple tint. Expanse of wings: 37 to 38 mm. Eastern States, South-Eastern Canada. — Larva diaphanous purple brownish with a lighter dorsal line and large brown neck- and anal shields. It lives in the stems of hops, where it forms galls.

P. rutila Gn. (41 c) is a doubtful species hitherto not certainly identified. Forewing brown, in the *rutila*. centre of the hindmarginal area extensively irrorated with yellowish-red, basal spots yellowish, maculae white as usual, reniform macula marked with yellow in the centre; the yellowish undulate line is proximally shaded with brown, distally faded. Hindwing light brown. New York, Illinois.

P. arctivorens Hmps. (41 c) has yellow forewings strewn with a bright red-brown, in the postmedian *arctivorens*. area tinged with purple, with dark-striped veins, basal spots yellow, maculae white, the reniform macula composed of a yellow line being in the centre marked with red-brown, inside with a white spot and a dot below it, behind the lower end with 2 white dots; the yellowish-white hindwing shows a reddish-brown tint. Canada. — The larva creeps out of the hibernated egg at the end of May and lives in the stalk of *Aretium*, *Cirsium*, and *Dipsacus*-species. It is diaphanous whitish with a yellowish-brown head and shields, and blackish-brown tubercles.

P. ochroptena Dyar (41 c) is the most similar to *rutila*, but quite light yellow, with somewhat broader *ochroptena*. wings, indistinct transverse lines, small white maculae, also the centre of the reniform macula being white; the undulate line is proximally shaded with brownish. Hindwing almost white. Colorado.

P. insulidens Bird (41 d) is on its yellow ground suffused with a bright red-brown excepting the central *insulidens*. area which is only at the costal margin irrorated with purple just like the postmedian area; maculae yellowish; behind the dentate undulate line the marginal area is of a purer yellow. Hindwing yellowish, irrorated with a greyish brown. Canada (Vancouver) to California (Mt. Shasta). — Larva of the usual exterior and living in the stalk of *Senecio hydrophilus*.

P. araliae Bird (41 c) has comparatively broad wings with the usual marking, the chrome-coloured *araliae*. ground darkened by purple-brown or red-brown irroration, maculae more or less scaled yellow, behind the purple subterminal area the undulate line is very strongly dentate, behind it the marginal area is of a purer yellow. Delaware, Pennsylvania, probably as far as Florida and Texas. — Larva dull pink with yellowish longitudinal lines and brownish belt-shaped darkening of the middle segments. It lives in the twigs of *Aralia spinosa* and goes into the earth for its pupation.

P. merriката Bird (41 d). Forewing yellow, thickly strewn with bright red-brown scales, in the *merriката*. marginal area darker red-brown, the maculae white as usual, the reniform macula is a yellow crescent surrounded with red-brown, proximally with 2, distally with 3 white spots, and in the centre of the exterior edge with a small yellow spot surrounded with red-brown; undulate line composed of small yellow lunae inside shaded with brown. Hindwing light yellow, veins and a subterminal band reddish-brown. Pennsylvania. — Larva pink with yellow longitudinal lines; it lives in *Podophyllum peltatum*.

P. angelica Sm. (41 d). Forewing light yellow, feebly irrorated with red-brown, more densely in the *angelica*. postmedian area, the double transverse lines are not very distinct, the maculae not lighter than the ground, surrounded by a darker shade. Hindwing light yellow with a brownish antemarginal line. Described from California.

P. harrisi Grt. (41 d) is on the yellow forewing very uniformly irrorated with red-brown, only in the *harrisi*. posterior half of the central area somewhat more yellow and behind it deeper red-brown with purely white maculae, in the reniform macula the usual yellow streak; the undulate line consists of small yellow spots. Hindwing yellowish-brown. Maine, Massachusetts, New York. — ab. **mulieris** Strd. (= ab. 1 Hmps.) is a ♀ form *mulieris*. without white maculae, and more uniformly red-brown than the otherwise more yellow ♀. — ab. **rubiginosa** *rubiginosa*. Bird is of a dull yellow ground-colour with smoky brown irroration, only the hind-margin remaining yellow, before and behind the central area purple brown, the maculae in all intermediate shades between pure white

and the ground-colour. Buffalo. — Larva dingy white, diaphanous, with black tubercles; it lives on *Heracleum lanatum*.

astuta. **P. astuta** Bird (41 d) is recognizable by the purple greyish-brown postmedian and marginal areas, the former being of the deepest colour in striking contrast with the yellow apical spot, the maculae being white, the reniform macula with a yellow central line surrounded by very small white spots. Hindwing ochreous-brownish. New York (Rye). — The yellowish larva with feeble longitudinal lines and black tubercles lives in *Collinsonia canadensis*.

verona. **P. verona** Sm. (41 d) is on the forewing yellow, strewn with red-brown, behind the postmedian line purple brown excepting the apex and anal angle, the coniform macula as usual composed of 2 spots above each other, the upper being yellow, the lower white; the small ring-macula is yellowish-white, the reniform macula yellow with 3 white spots below; hindwing yellowish-white, strewn with red-brown. Canada to Pennsylvania. The larva lives in *Eupatorium*.

anargyrea. **P. anargyrea** Dyar (41 e). Here the elliptical coniform macula is not divided into 2 spots, but only parted by a red-brown streak on the submedian fold; the small round yellow ring-macula is surrounded with brown and at its distal margin pupilled with a red dot; the reniform macula is likewise yellow and surrounded by yellow spots; the dentate brown undulate line is distally bordered with yellow. Hindwing yellowish-white, irrorated with red. Colorado.

impecuniosa. **P. impecuniosa** Grt. (41 e). Forewing yellow; as far as the posterior transverse line strewn with a fiery red, in the marginal area purple red-brown; the yellow coniform macula is surrounded with red-brown and centrally somewhat strangulated, the two upper maculae are likewise yellow, the reniform macula pupilled with red; the yellow-spotted undulate line is proximally bordered with brown and begins from the yellow apical spot. Hindwing greyish-brown. Canada to New York. — The flesh-coloured larva with a reddish head and black tubercles lives in *Aster umbellatus* and *Helenium autumnale*.

limata. **P. limata** Bird (41 e) has lemon-coloured forewings, before and behind the central area with a pink tint, with red-brown transverse lines and small white maculae, the coniform macula composed of 2 confluent spots, the ring-macula elliptical, the reniform macula divided into spots, between both the cell is tinted with pink; fringes also pink. Hindwing yellowish-white with pink fringes. Washington.

purpurifascia. **P. purpurifascia** Grt. (41 e). Forewing yellow, irrorated with fiery red, postmedianly purple brown, also before the central area towards the costal margin somewhat purple brown; maculae white, only the reniform macula yellow, irrorated with red, proximally above and below with very small white spots. Hindwing light yellow with brown veins. Canada to Illinois. — The larva is diaphanous purple brownish with black tubercles and lives in *Aquilegia*.

lysimachiae. **P. lysimachiae** Bird (41 e) is very closely allied to *purpurifascia*, but smaller and with narrower wings, with a more prominently yellow central area, basal spots and apical spot; the reniform macula is of the ground-colour and shows above and below one white dot each. Hindwing light yellowish with a purple irrorated marginal band. South Canada and Eastern States. — The larva is very similar to the preceding species, but lives in *Lysimachia quadrifolia*.

ptersii. **P. ptersii** Bird (= *triorthia* Dyar) (41 e). Yellow, irrorated with red-brown, in the distal half of the central area of a purer yellow, behind it purple brown excepting the hind-margin, the double transverse lines red-brown, the anterior line filled up with yellow; the coniform macula and ring-macula are oblique narrow white spots, surrounded with black, the reniform macula exhibits in the centre a yellow line surrounded by red, proximally with a white streak-spot, distally with 4 yellow spots; hindwing light yellow with a brownish subterminal band. Canada to New York. — ab. **luteipicta** Strd. (= ab. 1 *Hmps.*) shows the white colour in the maculae changed into yellow.

luteipicta. **P. polymniae** Bird (41 f) is the most closely allied to the following *cataphracta*; the basal, central and marginal areas are brass-coloured yellow, scantily strewn with purple brown, before and behind the central area purple brown, occasionally with a bluish shine, with the usual markings; maculae not large, coniform macula and ring-macula white, the former double and in the upper portion yellow, the reniform macula is a yellow moon-spot surrounded by small spots, the proximal ones being generally white, the distal ones yellow. Hindwing smoky grey, at the distal margin darker. From Washington. — The larva is light brown with a flesh-coloured reddish tint and lives in *Polymnia uvcdalia*.

cataphracta. **P. cataphracta** Grt. (41 f) is one of the most common species of a golden yellow ground-colour strewn with dark brown, before and behind the central area and at the margin greyish-brown excepting the apical spot; maculae yellow, the reniform macula as usual divided into spots; the double transverse lines are filled up with yellow. Hindwing greyish-brown. Canada to Colorado. — The diaphanous purple brownish larva with whitish longitudinal stripes lives in many kinds of plants such as *Lilium*, *Pastinaca*, *Helianthus*, *Aretium*, *Urtica* etc. — ab. **fluxa** Bird is a form irrorated quite dark brown with white-marked maculae, from Buffalo.

placida. **P. placida** Bird is a smaller species similarly coloured as the following *duovata* (41 f) or also *harrisi* (41 d), being separated from *harrisi* by the more strongly curved postmedian line; apex of forewing more falciform than usually; the central area is uniformly dull yellow below the median, above it as well as antemedianly and postmedianly irrorated with purple brown, in the marginal area slightly lighter, all the maculae of a pure white except the yellow central line in the reniform macula. Hindwing much lighter yellowish. Expanse of wings: 31 mm. Described according to a single ♂ from New Brighton, Pennsylvania.

P. duovata *Bird* (41 f). Forewing yellow, densely strewn with brown and black, in the marginal area *duovata*. more purple-tinted with white maculae, partly with a slight yellowish tint, also the most central of the small distal spots at the reniform macula is yellow; the double posterior transverse line is filled up with yellow. Hindwing yellowish-brown. New York. — The diaphanous purple brownish larva with broad white longitudinal lines lives in *Solidago sempervirens*.

P. imperspicua *Bird* (41 g) is larger than *duovata* with broader wings, irrorated more with purple *imperspicua*. brown and characterized by the entirely absent coniform macula and ring-macula, the purple brown reniform macula being rather indistinct; instead of the apical spot there is only a yellowish streak. Hindwing monotonously blackish-brown. New Hampshire, New York, Buffalo.

P. pertincta *Dyar* is very similar to *duovata* (41 f), but the colour is a more lustrous purple brown, *pertincta*. the scaling smoother, the central area near the hind-margin ochreous-yellow, above the median densely irrorated with dark brown; all the maculae, also the small spots of the reniform macula light yellow, distinctly larger than in *duovata*. Hindwing dark brownish-grey. Expanse of wings: 32 mm. Described according to a ♂ fed on *Lupinus polyphyllus*.

P. rigida *Grt.* (41 g) is quite a different, small, quite light yellow species, feebly strewn with red-brown *rigida*. and particularly in the marginal area, except the apex, irrorated with purple, with finely redbrown striped veins; maculae not lighter than the ground, surrounded with red-brown, the posterior transverse line is very strong. Hindwing yellowish-white, at the margin feebly red-brown. Canada to New York and Pennsylvania. — Larva dull reddish with yellow longitudinal lines; it lives in *Heliopsis helianthoides*, *Helianthus decapetalus*, *tuberosus*, *Arctium*, and *Zizia aurea*.

P. unimoda *Sm.* (41 g) is the most similar to *imperspicua*, but it lacks the purple antemedian and *unimoda*. postmedian darkening; only the coniform macula is absent, the upper maculae are in the red-brown ground surrounded by a feebly darker colour; in the apex a lighter oblique spot. Hindwing ochreous-brown. Colorado.

P. errans *B. & McD.* (41 g) is a small species allied to *unimoda*, but the posterior transverse line *errans*. is rectilinear, not dentate, and towards the hind-margin it bends distally; forewing purple brown, strewn with white and particularly in the central area towards the hind-margin and in the marginal area irrorated with golden yellow; the maculae are dull and indistinctly surrounded, the reniform macula 8-shaped; hindwing smoky brown. Expanse of wings: 26 mm. Arizona, described from a ♂.

P. aweme *Lyman* (41 c) is also allied to the preceding species, but easily discernible by the transverse *aweme*. lines being only single; ground-colour ochreous-brown, irrorated with red-brown and grey, before the central area and towards the margin blackish-brown, the brown maculae surrounded by blackish. Hindwing light ochreous-brown. From Canada.

P. nelita *Streck.* (41 h) like the following ones has deep purple brown forewings, in the discal area *nelita*. bronze-coloured, the dark maculae quite indistinctly surrounded, and with dark single transverse lines; the undulate line is quite indistinctly present. Hindwing purple greyish-brown. — ab. **linda** *Bird* has the maculae *linda*. in the usual way coloured white, only the most central distal spot at the reniform macula is yellow. — ab. **orbicularis** *Strd.* (= ab. 1 *Hmps.*) in a certain way forms a transition to it; here the ring-macula is a yellow *orbicularis*. dot, the reniform macula exhibits the usual yellow central streak, surrounded by small yellowish-white spots. — The diaphanous whitish larva with black tubercles lives in *Rudbeckia laciniata* and *Arctium*.

P. sciata *Bird* (= *limpida Bird nec Gn.*) (41 g) is very similar to the form *linda* of the preceding *sciata*. species, the forewing is more purple grey, in the hindmarginal half of the central area red, the double transverse lines filled up with bronze brown, the yellowish-white maculae centred with bronze brown scales; the yellowish undulate line is finely dentate, proximally bordered with blackish-brown. Hindwing grey. New York. — The light purple reddish larva with yellowish longitudinal lines lives in *Veronica virginica*.

P. apicata *Dyar* (41 h) is somewhat similar to *sciata*, but much more abundantly marked with white, *apicata*. and there are also white spots at the base of the shoulder-covers; at the apex there is an elliptical spot parted by the brown veins and clouded with brown. Hindwing smoky grey. The only species of the genus known from Mexico (Zacualpan) flies in September.

P. frigida *Sm.* (= *perobsoleta Lyman*) (41 h). Forewing deep golden bronze, before and behind *frigida*. the central area as well as at the margin tinted with purple grey, with double transverse lines and equally coloured maculae surrounded by a darker colour; the undulate line consists of small dark moon-spots proceeding from the yellow apical spot. Hindwing grey with a coppery tint. — ab. **thalictri** *Lyman* (41 h) has the maculae *thalictri*. marked with white, the round ring-macula distally shows a yellow dot, the reniform macula is divided into spots and shows the usual yellow central line. — ab. **terminalis** *Strd.* (= ab. 2 *Hmps.*) is in the marginal area *terminalis*. not tinted golden brown and has a shorter reniform macula. Canada to New York. — The diaphanous whitish larva with light reddish-brown belt-markings which disappear in its further growth, lives in species of *Thalictrum*.

P. cerussata *Grt.* (41 f as *cerusata*). Exterior similar to *sciata*, but it is twice as large; the central *cerussata*. area is towards the hind-margin irrorated with yellow, towards the distal margin with a purple grey reflection, the maculae are white; the indistinct red-brown undulate line is proximally shaded with a darker brown; hindwing greyish-brown with a coppery reflection. Massachusetts, New York. — The diaphanous purple brownish larva lives in *Vernonia noveboracensis*.

- limpida*. **P. limpida** Gn. (41 h) is also very similar to *sciata*, but much more monotonously coloured brown, strewn with grey, without the bronze tint in the central area or yellow irroration in the hind-margin; the small white maculae as in the allies, at the reniform macula outside a yellow spot. — In ab. **aerata** Lyman the maculae are not white, but of the ground-colour. — Canada, Eastern and Central States. — The purple brown larva with yellowish-white longitudinal stripes lives in the stalk of *Arctium*.
- nebris*. **P. nebris** Gn. (41 h) looks somewhat like a large *limpida*, but it is at once discernible by much darker brownish-grey hindwings; the forewing is of a more olive-brown tint irrorated with grey, postmedianly somewhat lighter; the whitish maculae are small and insignificant, the posterior transverse line is distally bordered with whitish; the undulate line is also composed of small whitish spots with small brown sagittary spots before them.
- nitela*. — In ab. **nitela** Gn. the maculae are not white, but of the ground-colour. Canada to New York and Illinois. — Larva dingy whitish, with a purple tinge on the central rings, with whitish longitudinal lines; it primarily lives on *Ambrosia trifida*, but it also goes on many other plants, particularly cultivated plants, above all on corn, so that it may do much harm.
- beeriana*. **P. beeriana** Bird almost looks like the form *aerata* of *limpida*; the forewing is uniformly smoky brown strewn with white, behind the postmedian line with a purple tint, with almost extinct markings, the reniform macula only indicated by a small darker spot, only occasionally surrounded by grey scales. Hindwing uniformly dark smoky brown. — ab. **lacinariae** Bird is the form with white-marked maculae, the reniform macula showing a brown central line, and the most central of the distal spots being yellow. Expanse of wings: 36 to 41 mm. Chicago, in the prairies. — Larva light bluish-grey with a pink hue, of a robust structure, without any longitudinal lines. It lives in the root of *Lacinaria pyenostaehya*.
- duplicata*. **P. duplicata** Bird (41 i). Forewing deep bronze-brown strewn with white. Central and marginal areas browner, behind the postmedian line irrorated with purple grey; the double anterior transverse line is quite indistinct, the maculae are very small darker spots, the reniform macula with a lighter central line; the undulate line is composed of small yellowish-white lunae. Hindwing grey with a coppery-brown tint. — ab. *obsolescens*. **obsolescens** Strd. (= ab. 1 *Hmps.*) exhibits the posterior transverse line as well as the undulate line quite obsolete. New York. — The diaphanous whitish larva with a chestnut-brown head and a darker dorsal line lives in the rootstock of *Collinsonia canadensis* in a chamber.
- necopina*. **P. necopina** Grt. (41 i) is an insignificant brown species densely strewn with a greyish white without any traces of markings, with reddish-brown hindwings being somewhat darker at the margin. New York, Buffalo, — ab. **imperturbata** Bird is a smaller form with lighter hindwings, a geographical race from Pennsylvania. — The light red-brown larva with straw-coloured longitudinal lines lives in *Helianthus tuberosus*, that of the subordinate form in *Helianthus divaricatus*.
- maritima*. **P. maritima** Bird (41 i) is extremely similar to *necopina*, larger, with broader wings and darker than *necopina* with a distinct posterior transverse line and without the bluish tint in the subterminal area. On the Atlantic Coast near New York. — Larva light, of the colour of burnt Sienna, with dull yellowish-white longitudinal stripes; it lives in *Helianthus giganteus*.
- silphii*. **P. silphii** Bird (41 i) is likewise extremely similar to the preceding species, but still larger with broader forewings of a browner ground-colour. Forewing smoky umber-brown, in the central area slightly darker, before and behind it with a very feeble lilac tint; the posterior transverse line towards the hind-margin mostly a little strewn with white on the distal side; the undulate line is rarely indicated by some small white scales, the reniform macula occasionally by a darker spot. Chicago. — The larva is dirty reddish with feeble yellowish longitudinal lines and a brown head; it lives in various species of *Silphium* (*therebinthinaceum*, *perfoliatum*, *laciniatum*).
- eupatorii*. **P. eupatorii** Lyman (41 i) is the most abundantly marked species of all. Forewing deep bronze-brown, mixed with purple grey, particularly postmedianly tinted purple; all the transverse lines are visible, the posterior line distally bordered with white; also all the 3 maculae are indicated as darker spots, the undulate line as small whitish spots proximally bordered with a darker colour. Hindwing grey with a coppery brown tint. Canada to Pennsylvania. — The light Sienna-brown larva with a yellow head shows broad yellowish-white longitudinal lines and lives in *Eupatorium*.

121. Genus: **Ogdoconta** Btlr.

Proboscis well developed, the erect palpi of medium length, frons smooth. Thorax clad with scales, prothorax with a long flattened tuft, metathorax with a loose tuft. Abdomen with small tufts only on the two first rings. They are rather small slender insects with broad wings with a rectangular apex. Chiefly distributed in Northern America.

- muscula*. **O. muscula** Schs. (42 f) is a small greyish-white species strewn with a dark brown, in some places slightly tinted ochreous, with a white oblique band from the apex to the centre of the hind-margin. Hindwing light brown with a darker margin. Mexico.

O. carneola *Sm.* Forewing purple grey with a reddish tint, in the central area blackish-brown whereby *carneola*. it is separated from all the others; the fine transverse lines are grey, maculae surrounded by grey, the reniform macula in the centre strangulated, the marginal area irrorated with brown. Hindwing greyish-brown with a yellowish tint. Expanse of wings: 25 mm. New Mexico.

O. cinereola (= *atomaria* *Wkr.*) (42 f) is larger than the preceding species, feebly strewn with brown, *cinereola*. in the central area and at the distal margin irrorated with red-brown; the fine transverse lines are white, the posterior double line filled up with white, the maculae surrounded with white, the reniform macula 8-shaped; the whitish undulate line is proximally shaded with brown. Hindwing light red-brown. Canada to Texas. — Larva green with white longitudinal lines.

O. altura *Barnes* (42 f) has dark golden brown forewings strewn with a lighter colour, with light *altura*. transverse lines, the anterior line slightly bent extending obliquely proximad, the posterior line more distinct, without maculae. Hindwing brownish-grey, distally darker. Texas.

O. sexta *B. & McD.* (42 g) is very similar to *altura*, but separated by a different course of the transverse *sexta*. lines, the anterior line being indistinct, white, between the costal margin and the median obliquely turned distally, from there obliquely proximad and parallel to the posterior line which only below the costal margin extends for a short distance distally and from there proximad to the centre of the hind-margin; ground-colour deep olive brown, strewn with white, without maculae. Hindwing smoky brown with lighter fringes. Texas.

O. moreno *Barnes* (42 g) is much lighter olive brown than the preceding species, with fine dark transverse *moreno*. lines being on the averted sides bordered with white, the anterior line almost straight; maculae marked by small light indistinct spots; the light undulate line is in the centre excurved. Hindwing light brown. Arizona.

O. plumbea *Dyar* (42 g). Forewing purple brown, irrorated with dark brown as far as behind the cell, *plumbea*. behind it lighter with a leaden violet shine; the hardly visible transverse lines are somewhat lighter scaled, only the twice excurved undulate line is more distinct. Hindwing dark grey. Mexico.

O. tacna *Barnes* (42 g) has reddish-brown forewings strewn with white, with fine double transverse *tacna*. lines filled up with white, the posterior line distally with dark vein dots; the maculae are finely surrounded with white, the reniform macula is strangulated and on the median prolonged as far as the ring-macula. Hindwing light brown. Texas.

O. pulvilinea *Schs.* (42 g). Forewing greyish-brown with a silk lustre, at the costal margin and at *pulvilinea*. the transverse lines irrorated with lilac, the latter lines very fine lilac-white, behind the distal line another lilac line, the maculae streak-shaped. Hindwing brownish-grey with white fringes. Mexico, Costa Rica.

O. justitia *Dyar* (42 g) is allied to *pulvilinea*, but larger and greyer; purple grey with a bronze *justitia*. gloss, strewn with white, with white dusty transverse lines, the maculae likewise surrounded by white, the reniform macula on the median incurved. Hindwing brownish-grey. Mexico.

O. lilacina *Drc.* is on the forewing red-brown with a coppery gloss, particularly in the postmedian *lilacina*. area irrorated with a violettish grey, with violet faded transverse lines, the maculae surrounded by violet, the reniform macula strangulated; the violet undulate line is proximally shaded with brown. Hindwing greyish-brown. Panama.

O. cymographa *Hmps.* (= *lilacina* *Drc.* part.) (42 h) resembles *lilacina*, but it is somewhat smaller, *cymographa*. the transverse lines are more distinctly red-brown, on the averted sides bordered with white, the reniform macula not strangulated, elliptical, with a whitish spot behind it; the whitish undulate line is proximally shaded with red-brown. Mexico.

O. pulverulenta *Schs.* is allied with *cymographa*, the forewing is violettish-brown, densely strewn *pulverulenta*. with lilac, the veins in the central area and behind it striped dark brown with brown transverse lines, the anterior line almost straight, the maculae edged with brown lines, the reniform macula large; the undulate line is very distinctly composed of a brown nebulous stripe which is dentate, with small lilac spots between the veins. Hindwing blackish-brown. Expanse of wings: 30 mm. Costa Rica. — The form **gamura** *Schs.* (42 h) *gamura*. is much darker purple brown with white irroration and a silky lustre; the transverse lines and the very large maculae are marked with brown; the marginal area is darkened. Guatemala.

122. Genus: **Periconta** *Dyar.*

In the general characters it resembles the preceding genus, but the frons exhibits a conical projection with a vertical keel in the centre. The anterior tibiae are short and squat, unarmed, the tarsi likewise very short with long claws. Abdomen tuftless. But one species:

P. obliqua *Dyar* (42 h). Forewing dark purple brown with a very intense bronze gloss, with a still *obliqua*. darker subterminal band, with faint lighter transverse lines and just as feebly marked maculae, and a light oblique patch from the apex. Hindwing dark grey. Mexico (Tehuacan), taken in September.

123. Genus: **Bryogramma** Schs.

Very closely allied to the genus *Ogdoconta*; the only species is likewise of a slender structure, with a smooth frons, the thorax clad with scales, prothorax tuftless, metathorax with a depressed tuft, abdomen tuftless. Wings comparatively narrow with rounded apex.

sisera. **B. sisera** Schs. (42 c). The white forewing is strewn with grey, with purely white transverse lines being sealed blackish-brown on the inverted sides; between the white maculae, which are connected by a white band below the cell, the cell is irrorated with a blackish brown; the postmedian area is brownish-grey as far as the black subterminal shadow; the posterior transverse line is crossed on the submedian fold by a black curved line. Hindwing white, at the margin brownish. Expanse of wings: 25 mm. Costa Rica.

124. Genus: **Geroda** Wkr.

Likewise small, slender insects with a shorter terminal joint of the palpus than in the preceding genus, the sealed prothorax showing a tuft flatly turned hindward, metathorax with a loose tuft. Abdomen with a small tuft on the first ring. Forewing below the sharp apex concavely excised and in the centre of the distal margin slightly produced. 4 small species from Tropical South America are known.

cornifera. **G. cornifera** Wkr. (42 h) is the largest species with red-brown forewings, dentate black transverse lines, a black punctiform ringmacula, and a narrow white S-shaped reniform macula, without the undulate line. Hindwing reddish with yellow fringes. Probably from Brazil.

excisa. **G. excisa** Jones (42 h) is much smaller than *cornifera*, the forewing costally strewn with grey, the small reniform macula in a white ring, the ring-macula being entirely absent, with traces of a darker undulate line. Hindwing dark brownish-grey, in the costal-marginal area whitish with white fringes. Brazil (Bahia).

leucocycla. **G. leucocycla** Drc. (42 h) is likewise similar, in the distal half of the central area and at the margin darkened by blackish, the transverse lines on the averted sides bordered with whitish, the reniform macula 8-shaped, at the margin there are white dots. Hindwing blackish-brown with a coppery gloss. Colombia.

xeneusalis. **G. xeneusalis** Wkr. (42 h) differs from the similar preceding species in a yellow reniform macula which is below pupilled with red-brown and surrounded by white. The undulate line is a faded yellowish band. Hindwing as in *leucocycla*. In the ♂ the reniform macula is entirely centred with red-brown. From Brazil (Organ Mts.).

125. Genus: **Makapta** Schs.

Very closely allied to the preceding genus, but the terminal joint of the palpus is generally somewhat longer, and the forewing is not excised at the distal margin. Several small Tropical American species have been described.

bruma. **M. bruma** Schs. (42 i). For this species and the two following ones the genus *Kohlera* was established on account of the pectinate antennae which are only finely serrate in the other species. Forewing on the grey ground irrorated with red-brown, with double transverse lines, round maculae which are surrounded with red-brown, and a red-brown undulate line. Hindwing very light reddish-brown. Brazil.

psectrocera. **M. psectrocera** Hmps. (42 i) is more coppery brown, behind the central area lighter, the posterior transverse line is only single, on both sides bordered with whitish; the light undulate line is proximally shaded with coppery brown. Hindwing white, irrorated with red-brown. Colombia.

rubescens. **M. rubescens** Schs. (42 i) has very much longer palpi and a more purple pink ground-colour, without any anterior transverse lines, the posterior line only indicated by short vein-streaks; only the reniform macula is represented by a narrow small brown lunula surrounded with white. Hindwing light purple pink. Brazil.

carnescens. **M. carnescens** Schs. (42 i). Forewing coppery red-brown with dentate single black transverse lines and a narrow white reniform macula. Hindwing lustrous dark brown. Brazil.

lurida. **M. lurida** Schs (42 i) is on the red-brown ground intensely irrorated with grey, in the basal half of the hind-margin and in the distal-marginal area on the golden yellow ground irrorated with fiery red, with fine brown transverse lines and yellow maculae irrorated with red, in the reniform macula below a white spot. Hindwing whitish, towards the margin irrorated with red-brown. Brazil, Argentina.

niveigutta. **M. niveigutta** Schs. (42 i). Forewing red-brown, scantily strewn with white, with feeble reddish-brown transverse lines, the posterior line being very oblique, and almost straight from the apex, distally bordered with a light grey, in the reniform macula as in *lurida* below with a white spot. Hindwing light reddish-brown. Brazil.

M. nebula Schs. (42 k) is separated by double transverse lines, the posterior of which is somewhat *nebula*. filled up with whitish, the maculae being finely surrounded with red-brown, the reniform macula not white-centred, the undulate line finely double. Hindwing of a pure white, at the costal margin strewn with brownish, in the ♀ dark brown. Brazil.

M. mursa Schs. (42 k). Forewing purple brown, strewn with white, the posterior transverse line only *mursa*. single, not dentate, the reniform macula beneath and above open, in the ♀ beneath with a white spot; the undulate line as in *nebula*. Hindwing of a pure white, at the apex brownish, in the ♀ darker. Brazil.

M. marginata Schs. (42 k) is on its grey ground strewn with dark brown, in the cell-end and below *marginata*. it tinted with reddish, with fine red-brown transverse lines, the posterior line distally with vein-dots and irrorated with whitish, the small grey maculae surrounded with brown; the grey undulate line is proximally shaded with red-brown. Hindwing in the ♂ of a pure white, at the margin brownish, in the ♀ quite brown, the ♀ forewing being irrorated with a more red-brown colour. Brazil.

M. holophaea Drc. (42 k) is one of the largest species, of a deep red-brown colour strewn with black, *holophaea*. with faint black transverse lines, behind the distal line with vein-dots, and with small indistinct lighter maculae in the somewhat darkened ground of the cell. Hindwing dark brown. Peru.

M. albivitta Hmps. (42 k) is one of the smallest species, light reddish-brown, with punctiform transverse *albivitta*. lines, the ring-macula being a black dot, the reniform macula yellow, irrorated with red, with a white stripe below it as far as the postmedian line; marginal area irrorated with blackish. Hindwing light brownish. Jamaica. — A variety exhibits behind the reniform macula a blackish spot (= ab. 1 *Hmps.*).

M. dileuca Hmps. (42 k) is easily discernible from *albivitta* by the white longitudinal stripe being double *dileuca*. from the lower cell-end to the posterior transverse line; ground-colour more yellowish reddish-brown, the distal half of the costal margin and the hind-margin are strewn with fiery red, both the maculae are yellow small spots strewn with red, the posterior transverse line is a double row of dots, the apex is parted by a whitish patch. Brazil, Argentina.

126. Genus: **Selicanis** Sm.

Distinguished by a stunted proboscis and correspondingly short palpi; the frons is smooth, the thorax clad with hair and hair-like scales, in front and behind with loose tufts. The abdomen is long, at the base covered with rough hair, tuftless. Forewing comparatively narrow. Only one North American species is known:

S. cinereola Sm. (43 a) is a red-brown species strewn with a greyish white, with a somewhat darkened *cinereola*. median area; the transverse lines are white, the reniform macula is a white streak-spot with a darkened area behind it, the other maculae being absent; the white undulate line is proximally shaded with brown. Hindwing greyish-brown with a reddish tint. Colorado.

127. Genus: **Stibadium** Grt.

Proboscis well-developed, the palpi straightly porrect with a short terminal joint; frons with a large round horny projection with raised margins and a horny plate below it. The thorax is roughly scaled, in front and behind with small loose tufts; anterior tibiae on the inside armed with a long bent claw. Abdomen tuftless. Forewing with a somewhat produced apex and an oblique margin. The range of the species extends over North and Central America.

S. olvello Barnes (43 a) is very different from all the others and easily discernible by the large white *olverlo*. spot below the cell and the bent white streak in the lower cell-end. Hindwing white, feebly tinted yellowish. From New Mexico.

S. concinna Dyar (43 a). Forewing greyish-white, strewn with dark brown, behind the distal transverse *concinna*. line with a blackish costal-marginal spot, the maculae surrounded with white, the ring-macula centred with velvety black; before the whitish undulate line there are small blackish spots. Hindwing white, at the margin brownish. Mexico.

S. laodamia Drc. (43 a) is the largest species with red-brown forewings which are in some places strewn *laodamia*. with dark brown, in the marginal area lighter, with red-brown transverse lines and a large semicircular velvety brown spot behind the distal line at the costal margin; the maculae are large, surrounded with dark brown. Hindwing red-brown. From Mexico.

S. curiosum Neum. (43 a) is marked very much like *laodamia*, but much smaller, the forewing is more *curiosum*. greyish-brown, strewn with white, in the central area blackish. Hindwing light brown, at the margin darkened. Arizona, Mexico.

S. murisca Schs. (43 a) is as large as *laodamia* (43 a), but with light grey forewings strewn with brown, *murisca*. with white veins and a large brown costal-marginal spot before the apex; the transverse lines are light, the anterior line almost removed into the centre, behind it the ring-macula which is surrounded with white; in the large reniform macula being surrounded with light there is yet a light discal streak; below the cell a black

stripe extends to the postmedian line; undulate line whitish, the fringes with a yellowish tint. Hindwing whitish, at the distal margin greyish brown. Expanse of wings: 46 mm. Guatemala.

- resoluta*. **S. resoluta** Dyar (43 a). Forewing brownish-grey with a brass lustre with bronze-brown transverse lines, the posterior line distally accompanied by a light stripe rising from the apex; the large maculae being surrounded with brown are somewhat lighter than the ground. Hindwing light brown. Mexico.
- ochoa*. **S. ochoa** Barnes (43 b). Forewing ochreous-greenish, in the central area in and below the cell irrorated with chestnut-brown, with dark olive green transverse lines, the maculae surrounded with dark olive green, besides a median shadow. Hindwing yellowish-olive, strewn with a darker colour except the marginal area. Arizona.
- raglena*. **S. raglena** Dyar (43 b) is lustrous brown with a purple tint, with whitish transverse lines, the large maculae surrounded with whitish and filled up with a somewhat darker colour; the marginal area remains lighter, in it the undulate line which is twice convex and before which there is a dark shadow being divided into small round spots, the apex is parted by whitish. Hindwing whitish with brown irroration and a lighter median line. Expanse of wings: 37 mm. Mexico (Guerrero).
- aureola*. **S. aureola** Edw. (43 b) resembles *ochoa* from which it is at once discernible by the absence of the maculae; the ground-colour is a purer yellow, irrorated with red-brown, with a purer yellow oblique band from the apex to the hind-margin. Hindwing yellowish-white, at the margin brownish. Arizona.
- mavina*. **S. mavina** B. & McD. (43 b) approximates the following *spumosum*, but it is easily discernible from it by the ochreous-yellow ground-colour and less distinct marking, particularly the median area is of a brighter yellow and therefore contrasts with the marginal area which is strewn more with brown and white; the maculae are scarcely noticeably surrounded with white; the apex is parted by white. The hindwing is lighter than the forewing, at the margin somewhat darker. Described according to a ♂ from Utah.
- spumosum*. **S. spumosum** Grt. (43 b) is reddish-brown, strewn with white, in the postmedian area lighter with indistinct whitish transverse lines, the anterior line being straight, the posterior line more distinct. Hindwing white, at the margin reddish-brown. Distributed from New York to Arizona.
- manti*. **S. manti** Barnes (43 b) is an insignificant dark brown species strewn with white, in the median area and behind it at the costal margin somewhat darker, with slightly darker transverse lines being somewhat bordered with whitish on the averted sides, the maculae surrounded with whitish. Hindwing brownish-grey. Texas, Mexico.
- corazona*. **S. corazona** Schs. (43 b) is much larger than the preceding species, very similarly marked, the ground-colour being more olive-brown, with faded greyish-white transverse lines, the maculae also being surrounded with that colour; the indistinct undulate line is greyish-white, too. Hindwing ochreous-brown. Mexico.
- psamathochromum*. **S. psamathochromum** Dyar (43 c). Forewing light brownish-grey with quite indistinct darker brown transverse lines and just as feebly indicated maculae; the undulate line is a lighter shadow which is somewhat dentate below the centre. Hindwing whitish, at the margin brownish. Mexico (Tehuacan).
- jalada*. **S. jalada** Schs. (43 c) is grey with a bronze green hue with darker indistinct transverse lines, the posterior line at its angle connected with a diffuse streak parting the apex; the maculae are also surrounded with a somewhat darker colour; marginal area lighter with traces of an undulate subterminal line. The whitish hindwing is irrorated with brownish. Mexico.
- crenulosum*. **S. crenulosum** Dyar (43 c) is very well distinguished from all the others by the finely dentate transverse lines, the posterior line being double and filled up with whitish, both enclosing the darker median area, also the marginal and subbasal areas being darker than the light reddish-brown other ground-colour; the whitish reniform macula is centred with a brown lunula. Hindwing whitish, at the margin brownish. Mexico (Tehuacan).
- astigmatosum*. **S. astigmatosum** Dyar (43 c) is dark grey, finely powdered with white, behind the postmedian line lighter with white transverse lines, the somewhat darker maculae finely surrounded with white; the white dusty undulate line runs parallel to the margin. Hindwing white, at the margin irrorated with grey. Expanse of wings: 22 mm. Arizona.
- navia*. **S. navia** Harv. (43 c) is somewhat similar to *crenulosum*, much lighter, red-brown, strewn with white, in the median and marginal areas somewhat darker, with whitish, very feebly undulate transverse lines; no ring-macula, the reniform macula 8-shaped, above and below centred with brown. Hindwing whitish, at the margin brownish. Texas.

128. Genus: **Emarginea** Gn.

Separated from the preceding genus by a but feeble rounded frontal projection with a horny plate below it, and very short crect palpi; the thorax is velvety clad with scales and hairs, in front tuftless, behind with a loose large tuft; the abdomen only exhibits a basal tuft and lateral hair. Middle and hind tibiae on the outside very thickly haired, the tarsal joints short and stout. Forewing at the distal margin below the apex

somewhat excised. A small number of pretty little species of a chiefly tropical range. The few North American representatives differ somewhat in the subcostal veins, and the tibiae are less thickly haired, for which reason the subgeneric name: *Cyathissa* (Grt.) was introduced for them.

E. combusta Wkr. (43 c) is easily recognisable by the white forewing being red-brown in the distal half, with a large black triangular spot at the costal margin, with a V-shaped white marking in it. Hindwing of a pure white. Brazil. *combusta.*

E. anna Schs. (43 c) is somewhat similar, the forewing at the base reddish-brown, distally bordered by some black scales, the median area is white with a black triangular spot at the costal margin, distally bordered by a broad black shadow; distal margin light reddish-brown, fringes at the apex, in the centre, and at the anal angle black. Hindwing white. Expanse of wings: 19 mm. Costa Rica. *anna.*

E. empyra Dyar (43 c) has a white head and black thorax with a red-brown tuft; forewing in the basal half white, in the marginal half brown, at the apex and anal angle with a purple reflection, otherwise dull, both colours parted by a black line which is above widened and contains a small white costal-marginal spot; at the base in the hindmarginal half a quadrangular loam-coloured yellow spot edged with black, and above it at the costal margin a similar smaller one. Hindwing dingy white. Expanse of wings: 17 mm. British Guiana. *empyra.*

E. grammophora Gn. (43 d). Forewing white, in some places irrorated with orange, in the marginal area black with lead-coloured scales and a large white triangular apical spot turning reddish-yellow downward. Hindwing of a pure white, at the apex and margin brownish, in the ♀ which exhibits a large black basal spot darker brown. Central and Southern Brazil, Uruguay. *grammophora.*

E. nocea Dyar (43 d). Forewing yellowish-white, mixed with olive-green, in the basal area light yellowish-white, distally bordered with white; in the upper half of the median area with a large velvety black spot with a yellowish-white costal spot in it; the double posterior black transverse line is finely undulate; marginal area darkened by olive-green. Hindwing greyer than in *grammophora*. Mexico (Orizaba). *nocea.*

E. oleagina Dgn. (43 d). Forewing orange mixed with white, the latter colour particularly in the hindmarginal area; transverse lines and an anal-angular spot black, in the centre of the costal margin there is a white semicircular spot bordered with black. Hindwing diaphanous white. Colombia, Ecuador, Peru. *oleagina.*

E. niphoplaga Drc. (43 d) is larger than the preceding similar species, intensely mixed with green, the median area red-brown, the black anal-angular spot is absent. Hindwing with a feeble reddish-brown tint. Colombia. *niphoplaga.*

E. percara Morr. (= quadrate Sm.) (43 d) is a variable small species with white forewings irrorated with green, in the upper half of the median area black, with a large white quadricuspid spot distally below the costal margin and a large black anal-angular spot. Hindwing diaphanous white, feebly brownish. The green colour is very delicate in all these small species and quickly turns yellowish-reddish; on such specimens the name *quadrate* is based. — **ochracea** Sm. (42 h) are specimens in which the black median area is reduced and replaced by ochreous-brown. Arizona, Florida. *percara.* *ochracea.*

E. pallida Sm. (43 d) is another similar species with white forewings, the upper half of the median area being bluish-grey, enclosing a very large, below rounded white costal-marginal spot, whilst an oblique bluish-grey spot extends from the centre of the posterior transverse line to the margin; maculae and transverse lines only feebly marked. Hindwing of a pure white. Colorado, California. *pallida.*

E. dulcinia Dyar (43 d) is very similar to *pallida*, but smaller, irrorated with olive-greenish and without the oblique dark spot above the anal angle, the places being bluish-grey in *pallida* are here more black. Hindwing whitish with traces of a darker median line. Expanse of wings: 18 mm. Arizona. *dulcinia.*

E. minastes Dyar (43 d) has silvery white forewings strewn with olive-green, the distal upper half of the median area being black, in it a spot being above yellow, below white, and forming a rounded projection in its centre at the cell-end; at the anal angle there is another black spot parted by the silvery white undulate line which forms a W below the centre. Hindwing white with a grey central spot and a spotted distal line. Expanse of wings: 26 mm. Mexico (Zacualpan). *minastes.*

129. Genus: **Bryolymnia** Hmps.

It has much longer palpi than the preceding genus with a more slender terminal joint, otherwise very similar, but on an average stouter and stronger; thorax clad with a mixture of hair and scales, the metathoracal tuft is feebler and turned hindward, forewing below the apex not excised. Except one North American species there are only tropical representatives.

B. floccifera Mschlr. (43 e) is a more slender species, distinguished by a long hair-brush beneath on the hindmarginal vein of the forewing, the white forewing shows black and emerald-green spots, the largest *floccifera.*

black spots below the base of the cell, at the lower cell-end and in the marginal area below the costal margin and above the anal angle. Hindwing brownish-grey. Jamaica.

- strabonis*. **B. strabonis** Dgn. is somewhat similar to *floccifera*, forewing white, except the costal-marginal portion feebly irrorated with green, with numerous black spots, two larger ones in the basal area, one at the costal margin and one at the hind-margin, 3 somewhat smaller ones in the centre, the middle spot forming the ring-macula; the reniform macula is oblong, of a pure white and surrounded with black, proximally below with a black dot, behind it a large black triangular spot at the costal margin with 4 small white costal-marginal hooks therein, with a somewhat violet tint, despatching an oblique patch towards the anal angle; fringe speckled black and white. Hindwing diaphanous white. Colombia (Bogotá).
- roma*. **B. roma** Drc. (43 e) is a well-known very common species, on the forewing white, in the basal area black, also in the upper postmedian half, and a light brown anal-angular spot. Hindwing diaphanous white, at the apex brownish, in the ♀ more extensively. Mexico to Guatemala.
- forreri*. **B. forreri** Drc. (43 e) is very similar to *roma*, but in the whole marginal area very broadly blackish-brown, defined by the black posterior transverse line which on the upper radial branch forms an acute angle distally, on the lower median branch a similar one proximad; the white fringe with 3 large black spots. Hindwing diaphanous white, at the apex brownish. From Mexico and Costa Rica. In specimens from Costa-Rica the rectangular bends of the postmedian line seem to be less deep = ab. 1 *Hmps*.
- marginata*. **B. marginata** Schs. (43 e) looks very much like *forreri* on the forewing, but it is easily discernible by its quite blackish-brown hindwing; the forewing lacks the black spot of the apical fringe, the postmedian line extends from the costal margin to the lower median branch in a slight arcuate line, not angular on the uppermost radial branch. Expanse of wings: 22 mm. Costa Rica.
- bicon*. **B. bicon** Drc. (= *ranapa* Schs.) (43 e) is a somewhat larger species easily discernible from *roma* by a more intense red-brown tinge and more intense deep red-brown marking; besides the hindwing is brownish, at the distal margin darker. Distributed from Mexico to Brazil, common.
- atriceps*. **B. atriceps** *Hmps*. (= *oryx* Drc. nec *Fldr.*) (43 e) looks very much like *bicon* but it is at once discernible from it by the quite black head with only a fine white longitudinal streak, which is white in the preceding species; the marginal area is more decidedly copper-red. Hindwing whitish, feebly brownish, in the marginal area darker. Guatemala.
- poasia*. **B. poasia** Schs. (43 e) approximates *atriceps* and has likewise a black head, but the forewing is white without any red-brown tints, in the marginal area dingy white, irrorated with grey except the apex, and traversed by the white subterminal line; the base is black except the hind-margin, the ring-macula surrounded and centred with black, the large white reniform macula is crossed by a blackish median shadow, before the black postmedian line near the lower cell-end a black spot, behind it black irroration as far as the costal margin. Hindwing white, at the distal margin greyish-brown. Expanse of wings: 31 mm. Costa Rica.
- viridimedia*. **B. viridimedia** Sm. (43 e). Marking not dissimilar to *poasia*, but in the ground-colour, particularly in the central area, green; the basal colour is a deep purple brown; the yellowish-green maculae are in white rings and finely surrounded with black, the reniform macula is 8-shaped, behind it a quadrangular black spot; the postmedian area is violettish-grey with a brown costal-marginal spot, the marginal area behind it bronze-brown. Hindwing whitish, at the margin brownish. Arizona.
- picturata*. **B. picturata** Schs. (43 e) looks very much like *viridimedia*, but it is more slender and it has broader wings, with a double posterior transverse line, in front of it a broad olive-brown median shadow, with white maculae, only the reniform macula above with a slight yellow tint; a distinct blackish undulate line is present. Hindwing whitish with a broad brownish-grey marginal band and central spot. Described from Mexico.

130. Genus: **Gonostygia** *Hmps*.

Separated from the preceding genus by more porrect palpi and a smooth frons only provided with a hair-tuft. Thorax clad as in the preceding genus, but in front and behind with loose tufts, the first abdominal rings also tufted, the largest tuft on the third ring. Only 3 small species the forewings of which are concavely excised at the distal margin above and below the centre.

- agonax*. **G. agonax** Drc. (43 f). Forewing brownish-black, slightly irrorated with grey, with brownish-white transverse lines and purely white small maculae; the white fringe in the centre, at the apex and anal angle with black spots. Hindwing black with a triangular white cellular spot. Mexico.

- cordax*. **G. cordax** sp. n. (43 f) is somewhat larger than *agonax*, not so coarsely strewn, but smooth, of a lilac-brown ground-colour, the anterior double transverse band filled up with a yellowish green, the posterior line distally bordered with yellowish-green, the small ring-macula centred with yellowish-green; behind the broad median shadow the distal half of the median area is darker purple brown; the large triangular coniform macula is deep black; fringe red-brown. The white spot of the hindwing is larger. Mexico (Orizaba), type in the Coll. DRAUDT.

G. jacopa Schs. (43 f) is much smaller, in the basal third yellowish-green, in the central area black *jacopa*, and in the marginal area blackish-brown; the black transverse lines are finely dentate, the maculae white, the posterior transverse line on both sides irrorated with green, also the margin irrorated with green; fringe black speckled with white. Hindwing black with a large opalescent white spot. Expanse of wings: 19 mm. Guatemala.

131. Genus: **Leucosigma** Hmps.

Like the preceding genus, but with a quite smooth frons, erect slender palpi, the thorax almost only clad with scales, in front and behind with loose tufts, abdomen tuftless. Forewing below the apex excised. Only 3 small species.

L. uncifera Drc. (43 f). Forewing fiery red, mixed with yellow, with brown-striped veins; in the base *uncifera*, of the cell and at the lower cell-end one white spot each; the finely dentate transverse lines are on the averted sides bordered with white, the apex parted by white. Hindwing light red-brown, at the margin with a fiery red hue. Peru.

L. reletiva Dyar (43 f) is evidently very similar to *uncifera*, but the ground-colour is violettish-grey, *reletiva*, without any red, the white spots are yellow, and the light apical spot is quadrangular. Hindwing brownish-grey. Expanse of wings: 28 mm. Described according to a much flown ♀ from Panama.

L. separata Zerny (43 f) has light olive-brown forewings with indistinct brownish transverse lines, *separata*, the anterior line double, the posterior line quite indistinct, with purely white maculae margined with blackish, the reniform macula on the median inwardly removed; a white marginal line is towards the apex more proximally removed, but here in the centre it projects again to the margin, whereby the approximate figure of a flat 3 is produced; here the marginal area behind it is dark olive-brown. Hindwing whitish with a broad dark marginal band. Expanse of wings: 27 mm. Bolivia.

132. Genus: **Calymniodes** Hmps.

This genus comprises a large number of mostly strong, beautifully coloured and marked species with a well developed proboscis, erect palpi with a short terminal joint, a smooth frons, sealed thorax with a small tuft behind, and a tuftless abdomen which, however, is often clad with long rough hair. Wings rather narrow. The range extends from Mexico to the south.

C. basicarnea Wkr. (= cirrus Fldr.) (43 f) is in the ♂ distinguished by dense woolly hair on the basal *basicarnea*, half of the forewing beneath; also above the basal half is densely covered with purple red hair; the two white transverse lines are confluent above the hind-margin; the maculae are minute orange spots, behind the distal line follows a violettish-grey band. Hindwing light brown, at the margin darker. Venezuela to Peru.

C. rhodopis Drc. (43 f). Forewing on the white ground red-brown mixed with black, the two transverse *rhodopis*, lines white, the posterior line doubly edged with black, the maculae are orange-reddish; behind the white undulate line the marginal area is darkened. Hindwing white, at the margin brownish. Peru.

C. ferrealis Hmps. has light red-brown forewings with brown very indistinct transverse lines, the *ferrealis*, posterior line distally bordered with white, the somewhat lighter maculae are only very feebly indicated; before the feeble whitish undulate line small brown spots. Hindwing white, at the margin red-brown. Expanse of wings: 44 mm. Colombia.

C. leucographa Hmps. (43 g). Forewing deep chestnut-red, in the basal area white, towards the hind- *leucographa*, margin mixed with yellowish, with white transverse lines being confluent above the hind-margin, and with small fiery red maculae; behind the postmedian line with a narrow white band with white veins behind it as far as the white undulate line. Hindwing white with a red-brown marginal band. Peru.

C. promentoria Dgn. (43 g) is similarly marked, but the ground-colour is light yellow, irrorated with *promentoria*, red-brown, postmedianly whitish; the brown transverse lines are bordered with white on the averted sides and confluent above the hind-margin; the maculae are small lighter spots. Hindwing white, at the apex feebly brownish with a dark central spot. Ecuador, Peru.

C. obconica Drc. (43 g) is one of the most beautiful and largest species and very similar to *leucographa*; *obconica*, forewing deep red-brown, before and behind the median area violettish-grey, edged by the white, above the hind-margin confluent transverse lines; the maculae are small reddish spots; behind the postmedian line at the costal margin a large white spot with a red-brown spot therein, before the apex with an oblique white costal-marginal streak; the undulate line is violettish-grey, before it there are small brown spots. Hindwing white with a brown marginal band and central spot. Peru.

C. grandimacula Gn. (43 g) is smaller, with narrower wings, the hindwing greyish-brown, otherwise *grandimacula*, very similarly marked. Brazil.

C. oliveata Hmps. (43 g) is likewise very similar; ground-colour more orange-yellow strewn with *oliveata*, black, at the hind-margin and marginal area irrorated with dark brown; the grey transverse lines are confluent close on the hind-margin, not above it; the orange maculae are more distinctly surrounded with blackish brown, the reniform macula strangulated. Hindwings greyish-brown, at the margin darker. South-Eastern Peru.

- mastoides*. **C. mastoides** *Hmps.* (= *grandimacula* *Drc.* part.) (43 g) resembles *oliveata*, but the maculae are almost entirely absent, instead of them there are 2 black dots above each other in the cell-end; behind the postmedian line there is a violettish grey band, before the undulate line the small dark spots are absent. Hindwing lustrous brown. A common species occurring from Mexico to Peru. — ab. **saturation** *Strd.* (= ab. 1 *Hmps.*) has much darker chocolate-coloured forewings.
- pygmaea*. **C. pygmaea** *Hmps.* (43 g). The yellowish forewing is irrorated with fiery red and strewn with black, the postmedian area brownish-white turning darker brown towards the white undulate line; the brown transverse lines are on the averted sides bordered with white and flow together close above the hind-margin; no maculae. Hindwing greyish-brown. Expanse of wings: 26 mm. From French Guiana.
- bilineata*. **C. bilineata** *Mssn.* (43 g) is very similar, red-brown, in the postmedian area violettish grey with white transverse lines which are not united at the hind-margin; the maculae are small fiery red spots; a white oblique costal-marginal streak passes over into the grey undulate line before which the veins are striped white. Hindwing coppery brown. Ecuador, Peru.
- rufula*. **C. rufula** *Dgn.* (43 h) is a large very dark red-brown species without a lighter postmedian area, with yellowish-grey transverse lines and orange maculae, and an 8-shaped reniform macula; the undulate line is also ochreous grey. Hindwing reddish greyish-brown. Colombia, Peru.
- xanthia*. **C. xanthia** *Jones* (43 h) is very similar to *rufula*, but smaller, with narrower wings, the ground-colour being reddish-yellow, the transverse lines brown, in the marginal area brown irroration; maculae absent except the ring-macula which is surrounded with a slightly darker colour; the undulate line is whitish, proximally shaded with brown. Hindwing yellowish-white, at the margin and veins brownish. Brazil.
- infirmia*. **C. infirmia** *Schs.* (43 h) is still more monotonously coloured and marked than the preceding ones, light ochreous-brown, mixed with grey, with quite indistinct darker transverse lines, the anterior line partly double, the very small maculae feebly surrounded with brown; the undulate line is little lighter, proximally shaded with brown. Hindwing light brown, at the margin darker. Colombia, Brazil.
- conchylis*. **C. conchylis** *Gn.* (43 h) is the chief representative of a small group with silvery white maculae with lustrous red-brown forewings, in the postmedian area with a slight grey tint, with black transverse lines, the posterior line more distinct and dentate; the ring-macula is cordiform, the reniform macula tricuspid with a red centre; the undulate line is composed of indistinct red lunulae. Hindwing whitish, at the margin reddish-brown. Mexico to Brazil.
- acamas*. **C. acamas** *H.-Schäff.* (43 h) is very similar to *conchylis*, in the costal-marginal area irrorated with red and yellow, with a distinct white dot in the base of the cell; the anterior transverse line is proximally bordered with yellow, the posterior line is extended into vein-dots, the proximally brown-shaded undulate line is yellowish. Hindwing coppery red-brown. Venezuela, Peru.
- pyrostroma*. **C. pyrostroma** *Dgn.* (43 h) differs from the preceding ones in the Y-shaped ring-macula, more fiery red forewings, the reniform macula being more fiery red and yellow, only distally and proximally with one fine silvery white streak each; the posterior transverse line is double, filled up with grey. Hindwing greyish-brown, at the margin darker. Peru.
- turcica*. **C. turcica** *Drc.* (43 h). Forewing silky lustrous grey, irrorated with red-brown, with double transverse lines filled up with grey; the ring-macula is a white arcuate streak with a dot above it, the reniform macula a yellow streak, surrounded by silvery white streaks and dots, all of them being encircled with black, the cell between them irrorated with black, the very indistinct grey undulate line exhibits a black spot at the anal angle. Hindwing red-brown with a black median spot. South-Eastern Peru.
- orbica*. **C. orbica** *Hmps.* (= *latifascia* *Drc.*) (43 i). This species initiates a group of mostly smaller, slender insects without the intense hairing of the ♂ abdomen. Forewing in the basal area red-brown, in the median area ochreous-reddish, behind it brownishgrey; transverse lines double filled up with ochreous-yellowish, the anterior line forming a bow directed towards the base; maculae white, surrounded and centred with red-brown. Hindwing light brown, at the margin darker. Mexico to Venezuela.
- latifascia*. **C. latifascia** *Wkr.* (= *oryx* *Fldr.* nec *Drc.*) (43 i) is very similar, on an average larger, the anterior transverse line straight, the median area broader, the reniform macula narrow and oblique. Hindwing reddish-brown. Mexico to Venezuela.
- mesochroa*. **C. mesochroa** *Hmps.* (= *latifascia* *Drc.* part.) (43 i) is somewhat similar to *latifascia*, but very much smaller, the anterior transverse line not double, the reniform macula less oblique, before it a blackish-brown median line. Hindwing red-brown. Panama.
- albiorbis*. **C. albiorbis** *Drc.* (43 i) is likewise a very small species, on the forewing dark red-brown, in the median area whitish-yellow, only feebly irrorated with red-brown, with single, finely dentate transverse lines which are bordered with white on the averted sides; ring-macula purely white, reniform macula in the centre yellowish,

on the median inwardly removed, between both a black spot. Hindwing light brown, at the margin darker. Peru. — ab. *medioalba* Strd. (= ab. 1 *Hmps.*) has an almost purely white median area, the markings therein *medioalba*. quite obsolete.

C. maneti Schs. (43 i) is larger than the preceding species, of a slate-grey ground-colour, the median *maneti*. area only at the costal margin and hind-margin and before the posterior transverse line light brownish; a light brown oblique patch extends from the base of the costal margin to the hind-margin at the anterior transverse line, these two being blackish-brown, the anterior line double, filled up with reddish, the maculae surrounded with reddish, between both a blackish-brown median shadow, behind the reniform macula a slate-coloured brown shadow. Hindwing brownish-grey. Expanse of wings: 48 mm. Costa Rica.

C. amplioplaga Wkr. (43 i). Here the whole basal area is of the same colour as the greyish-white median *amplioplaga*. area, only the base of the costal margin being brown like the rest of the wing; the maculae are very feebly encircled; the posterior transverse line is distally bordered with whitish, the apex parted by a whitish patch. Hindwing greyish-brown. Haiti.

C. naevia Gn. (= *latifascia* Drc. part.) (43 i) is very much like *orbica*, but the median area is more *naevia*. yellowish-grey without a reddish tint, the rest of the wing is covered with lustrous grey scales, from the reniform macula a black ray extends on the discal fold to the posterior transverse line. Hindwing light reddish-brown, at the margin darker. Widely distributed and common from Mexico to Brazil.

C. melagona *Hmps.* (= *latifascia* Drc. part.) (43 k) is just as common and widely distributed, separated *melagona*. from *naevia* particularly by the scarcely lighter median area; the posterior transverse line is more distinctly double; before the faint reddish undulate line there is a black wedge-shaped spot below the costal margin. Hindwing light red-brown, at the margin darker. Mexico to Costa Rica.

C. obliquirena *Hmps.* looks very much like *melagona*, but it is of a coppery red-brown colour, strewn *obliquirena*. with whitish, before the centre in the upper two thirds suffused with black, in the marginal area irrorated with blackish-brown except the anal angle; the marking is otherwise almost the same as in *melagona*, also the black streak on the discal fold and the subcostal wedge before the undulate line are present; the double transverse lines are filled up with whitish. Hindwing light brown, at the margin darker with a blackish median spot. Expanse of wings: 30 mm. The only North American species, described from Arizona; perhaps = *Mon. ensina* (p. 269).

C. aperiens Wkr. (43 k) is likewise very similar to the preceding species, but at once discernible by *aperiens*. the quite different course of the anterior transverse line being distally angled below the costal margin and again distally bent above the hind-margin; hindwing whitish, only on the veins and at the margin somewhat brownish. Mexico to Venezuela.

C. parta Schs. (43 k) is a small species easily recognised by the orange-yellow, red-strewn median *parta*. area down to the submedian fold, the rest of the wing being red-brown; transverse lines indistinctly double, filled up with whitish, the anterior line removed far into the centre; maculae with whitish rings, reniform macula strangulated with black dots above and below, undulate line yellowish. Hindwing brown. Brazil.

C. confisa Schs. (43 k). Forewing light brown, strewn with dark brown and grey, in the upper two *confisa*. thirds of the basal area suffused with black, the median area only at the costal margin lighter reddish; the transverse lines are velvety blackish-brown, also a spot behind the reniform macula; both the maculae are large, strewn with yellowish-reddish, partly bordered with white; postmedian area more grey, in the lower half strewn with white, a black undulate line is only visible below the costal margin. Hindwing greyish-brown. Expanse of wings: 31 mm. Costa Rica.

C. dislocata Wkr. (43 k) and the following species *leucopis* exhibit a purely white ring-macula; forewing *dislocata*. red-brown, particularly in the basal area mixed with yellow, with double brown transverse lines, the posterior line below the costal margin on both sides bordered with yellow; the reniform macula is quite indistinct, and only at the proximal border it shows some white dots; the undulate line is composed of small yellow spots proximally bordered with brown. Hindwing light brown, at the margin red-brown. Venezuela.

C. leucopis *Hmps.* is a very small lustrous red-brown species with a golden yellow, red-strewn median *leucopis*. area; both the transverse lines are double, the anterior line filled up with yellow, the posterior line with white; the ring-macula is a silvery white luna, the lower end of which extends to another silvery spot at the upper cell-end; undulate line yellowish-white. Hindwing coppery red-brown. Expanse of wings: 22 mm. Colombia (Rio Dagua).

C. atrosignata Zerny (43 k). Forewing light greyish-brown, in the median area towards the hind-margin *atrosignata*. irrorated with greenish-white, with double blackish transverse lines filled up with whitish, and with large greenish-white, brown-centred maculae; from the reniform macula a blackish-brown longitudinal streak extends on the discal fold to the postmedian line; before the apex there is a small blackish-brown triangular spot at the costal margin. Hindwing diaphanous white with a brownish apex and dark marginal line. Expanse of wings: 27 mm. Bolivia (Rio Songo).

C. retracta *Hmps.* (43 k). Forewing dark red-brown, in the median area and the basal half of the *retracta*. hind-margin yellowish-reddish, with single blackish transverse lines; the coniform macula and ring-macula are centred with a pure white, the reniform macula is narrow, strangulated, its lower end prolonged to the ring-macula, with a white ring, centred with black, before it the cell is filled up with blackish. Hindwing greyish-brown. Peru.

fuscoma. **C. fuscoma** Schs. (431). Forewing in the basal and marginal areas ochreous-brown, in the broad median and postmedian areas red-brown, strewn with yellow; transverse lines on the averted sides broadly bordered with yellow, the maculae with black centres and orange-red rings. Hindwing light red-brown. Costa Rica, Brazil.

133. Genus: **Ipimorpha** Hbn.

Allied to the preceding genera, but chiefly separated by the keel-shaped centre of the collar, a tuft in the shape of a three-sided pyramid on the prothorax, a loose tuft on the metathorax, and the tuftless abdomen being hairy at the base and laterally; the thorax is clad with hair and hair-scales. Forewing below the pointed apex somewhat excised. Besides 2 palearctic species (cf. Vol. III, p. 228) represented by some forms in North America.

pleonectusa. **I. pleonectusa** Grt. (= *aequilinea* Sm.) (431). Forewing yellowish-reddish with light yellow, almost straight transverse lines and large red-brown maculae being surrounded with light yellow, the reniform macula strangulated and inwardly removed on the median, the yellowish undulate line proximally shaded with brownish. Hindwing light yellowish-brown. Canada to Colorado. — v. **manitobae** Strd. (= ab. 1 *Hmps.*), from Manitoba and Alberta, is a paler, less reddish form. — The larva is diaphanous green with white longitudinal lines and lives between convolute leaves of trembling-poplars with the opening at the lower end.

nanaimo. **I. nanaimo** Barnes (431) is irrorated with brown on the whitish-yellowish ground, with darker transverse lines and median shadow, also the large maculae surrounded with a feebly darker colour; the undulate line is only indicated by the somewhat lighter marginal area. Hindwing light brownish. British Columbia.

subvexa. **I. subvexa** Grt. (431) is the largest species, on the grey ground strewn with olive-brown, with brown transverse lines being on the averted sides bordered with a light yellowish colour, and with brown maculae surrounded with whitish; the whitish undulate line is proximally shaded with olive-brown. Hindwing light brown. Texas, Colorado.

viridipallida. **I. viridipallida** B. & McD. (431) is the most closely allied to *nanaimo* and has the same markings, but the ground-colour is an ochreous greenish with somewhat darker transverse lines bordered with whitish and with large maculae encircled with white. Hindwing of a pure white with a very feeble darker median line. Expanse of wings: 35 mm. California.

134. Genus: **Sacadodes** Dyar.

This genus having only been established in 1912 is allied to the South African genus *Diparopsis* containing but one species: *castanea* *Hmps.*, a notorious cotton-vermin which it resembles peculiarly much, and its larva is one of the so-called „Pink Boll Worms“, living on cotton. Proboscis stunted, palpi porrect or but slightly rising, the 2nd joint long and thick, the last joint short, in the ♂ almost ball-shaped, in the ♀ long and slender; antennae bipectinate, in the ♀ with shorter pectinations. The frons exhibits a roughened projection with angular contours; the thorax is hairy, showing in front a minute tuft, on the metathorax a large parted tuft; the abdomen exhibits a small tuft on the first ring. In spite of the strong middle radial on the hindwing rising below the centre of the cross-vein, the species is inserted between *Leucosigma* and *Bagisara*.

pyralis. **S. pyralis** Dyar (431). Colour of forewing changing from loamy yellow to purple brown, with darker olive-brown basal and subterminal areas and a narrow dark spot on the cross-vein and lighter transverse lines, the proximal line bordering on the dark basal area, the distal line proximally bordered with dark and running near the subterminal line being parallel to it. Hindwing in the ♂ whitish, in the ♀ purple brown. Expanse of wings: 30 mm. The species was at first reported from Trinidad, where it was bred from cotton-worms, but later on it got known also from Panama, Venezuela, and Argentina, thus being apparently very widely distributed. — The cylindrical larva is provided with deep segmental indentations and has strongly chitinized neck- and anal shields; in its young stage it shows pink longitudinal lines on the dorsum and in the sides, and oblique subdorsal spots lacking the adult larva which is then yellowish white.

135. Genus: **Bagisara** Wkr.

Distinguished from the allied genus *Calymniodes* by the absence of all the tufts on the purely scaled thorax, the palpi being also somewhat thinner and longer. Several species, 3 of which extend up to North America.

subusta. **B. subusta** Hbn. (= *erecta* Wkr., *dispartita* Wkr., *congesta* Wkr., *trilinea* Wkr.) (431) is a small ochreous-yellowish species with fine brown transverse lines bordered with whitish, and 2 black dots above each other instead of the reniform macula; the brownish undulate line is distally bordered with white. Hindwing

diaphanous yellowish-white, at the margin more yellowish. — ab. **inusta** *Gn.* is somewhat more densely powdered with brown; — ab. **incidens** *Wkr.* has instead of the 2 discal dots a round blackish spot. The range is immense, extending from Florida and Texas to Paraguay and Argentina; nearly everywhere very common.

B. obscura *Hmps.* (44 a). Forewing grey, suffused with red-brown and scantily strewn with black, with double dark transverse lines filled up with whitish; the ring-macula is a small whitish spot, the narrow strangulated reniform macula with a white ring; behind the lighter undulate line the marginal area is darkened. Hindwing greyish-brown. British Guiana.

B. rectifascia *Grt.* (44 a) has yellowish-white forewings which, excepting the costal-marginal portion are irrorated with yellowish-brown and strewn with brown, with 3 white transverse lines and a faint white small discal luna, in the marginal area irrorated with reddish with whitish veins. Hindwing yellowish-white, at the margin strewn with brown. United States (Pennsylvania, New Jersey, Illinois, Alabama).

B. pacifica *Schs.* (44 a). Forewing greyish reddish-yellow with a slight gloss, with lighter transverse lines, the anterior line removed into the centre near the posterior line, the undulate line being almost straight; at the upper median branch 2 black marginal dots. Expanse of wings: 31 mm. Costa Rica.

B. albicosta *Schs.* (44 a) is on the forewing quite light copper-brown, with white transverse lines and costal margin; the hind-margin is tinted yellowish-red, the broadest before the undulate line, the distal margin behind this line being darker copper-brown; at the cross-vein there is a white streak. Hindwing yellowish-red, at the ends of the veins iridescent. Expanse of wings: 39 mm. Costa Rica.

B. oula *Dyar* (44 a) is on the forewing lustrous whitish-grey, without yellow tints, at the distal margin brownish, the fringe being the darkest, with 3 very fine transverse lines, the anterior line removed far into the centre, the central line below the costal margin pointedly angular, the posterior line only curved. Hindwing yellowish-white, at the margin brownish. Expanse of wings: 33 mm. Mexico (Jalapa).

B. paulensis *Schs.* (44 a). Forewing light ochreous, strewn with red-brown, at the margin darker red-brown, with fine brown transverse lines, the anterior line removed into the centre, the undulate line ending directly at the anal angle, without any maculae. Hindwing light yellow, at the margin reddish-brown. Colombia, Brazil.

B. avangareza *Schs.* (44 a) is much smaller, light yellowish-red, at the hind-margin and distal margin except the apex irrorated with lilac brown; the fine brown transverse lines are somewhat undulate, on the averted sides accompanied by a faint brownish shadow; fringe dark violet. Hindwing whitish, at the margin yellowish. Expanse of wings: 29 mm. Costa Rica, Panama.

B. anotla *Dyar* (44 b) is likewise reddish-yellow, almost without any markings, the most distinct is the uniformly curved darker shaded undulate line; traces of the distal transverse line forming an acute angle behind the reniform macula which is indicated as a ring; the centre of the distal margin is somewhat darker shaded. This species described from Panama may be only a little marked form of the preceding species.

B. demura *Dyar* (44 b). Forewing ochreous-yellow with a feeble brownish tint, smooth and with a silky gloss, not strewn, with fine not undulate brown transverse lines, the two distal ones subcostally almost rectangularly bent. Hindwing ochreous yellow. Expanse of wings: 30 mm. Mexico.

B. xan *Dyar* (44 b). Ground-colour of *demura*, but scantily strewn with brown, from the undulate line gradually darkening, with dark brown fringes; the transverse lines similarly running as in *demura* and with traces of a ring-shaped reniform macula. Expanse of wings: 39 mm. Mexico (Orizaba).

B. lulua *Schs.* is likewise a very similar species. Forewing ochreous-yellow, beneath white, with very fine indistinct brownish transverse lines, the anterior line being vertical, before the posterior line a feeble brownish shadow, slightly distally bent, the subterminal line parallel to it, the distal margin somewhat brownish and before it in the lower half a narrow brownish-grey shadow. Hindwing ochreous-yellow, at the hind-margin with somewhat deeper yellow hair. Expanse of wings: 38 mm. Guatemala.

B. buxea *Grt.* (44 a). Forewing yellowish-white, towards the margin with increasing reddish-brown irroration, with fine red-brown transverse lines and a feeble discal streak; fringes of a bright red-brown colour. Hindwing yellowish-white, at the margin brownish. — **gustata** *Dyar* are decidedly yellow specimens with faint transverse lines, but a very dark red-brown margin; — **delicia** *Dyar* (44 b) is a form more intensely strewn with brown with all kinds of transitions. From Wisconsin, Texas, and Arizona.

B. patula *Drc.* (44 b) is quite different from the allies. Forewing golden yellow, densely strewn with red and with red-striped veins; the sharply angled transverse lines are red-brown, the ring-macula is a black dot, the reniform macula a white streak connected with a pear-shaped white spot below it. Hindwing coppery pink. Mexico, Costa Rica.

136. Genus: **Elydna** Wkr.

Proboscis developed, palpi long and slender, erect, with a long terminal joint; thorax purely clad with scales without any tufts, the abdomen being also tuftless and smoothly scaled; tibiae long-haired. Of this genus occurring in the palearctic and Indian regions (cf. Vol. III, p. 229, Vol. XI, p. 130) also some American representatives are known the marking and colouring of which closely approximates the plainly marked species of *Bagisara*.

- tristicta*. **E. tristicta** Hmps. (44 b) has whitish forewings irrorated with red-brown and mixed with yellow in the median area, the veins striped red-brown, with brown transverse lines and small white spots at the cell-end instead of the reniform macula; the two upper radial branches are more intensely striped red-brown. Hindwing yellowish-white with small red-brown marginal lunae. Found in Arizona, Haiti, and Grenada. — **amorata** Barnes is the race from Arizona, without the red-brown marginal spots of the hindwing, the postmedian line being removed nearer to the distal margin.
- gulnarc*. **E. gulnarc** Streck. (44 c). Forewing silvery olive with lustrous silvery transverse lines and small golden spots at the apex and 2 above the anal angle; fringe silvery grey. Hindwing light lustrous olive, at the margin darkened. Pennsylvania, Illinois.
- laverna*. **E. laverna** Drc. (44 c). Forewing olive-brownish with white transverse lines bordered with ferruginous yellow of a very characteristic course, the two distal ones ending in an acute angle at the uppermost quarter of the distal margin, without maculae. Hindwing yellowish-reddish brown. Mexico and Guatemala.
- malacha*. **E. malacha** Drc. (44 c) is very similar to *laverna*, but of a softer, more powdered ground-colour, not so lustrous, the transverse lines not bordered with ferruginous yellow, but with brown, and with a fine brown discal streak on a whitish spot. Hindwing light golden yellow. Mexico.
- graphico-*
mas. **E. graphicomas** Dyar (44 c) is on the forewing loam-coloured grey, strewn with dark brown, with 3 fine brown lines of a similar course as in the preceding species, the two distal ones connected by a streak from the cell-end to the margin; margin and fringes darker. Hindwing brown with 2 darker, similarly shaped lines as on the forewing. Mexico (Guerrero).

137. Genus: **Closteromorpha** Fldr.

Very closely allied to the preceding genus and chiefly separated by a secondary sexual distinction of the ♂♂; the hind tibiae are strongly expanded and contain a fold with a scent-scale tuft which can be turned inside out. The forewing forms a projection on the upper median branch, below it a slight excision.

- reniplaga*. **C. reniplaga** Fldr. (44 c). Forewing of a bright red-brown colour, irrorated with grey, with whitish transverse lines, the posterior line of a very characteristic scalariform shape, above before it a large chocolate-brown costal-marginal spot. Hindwing red-brown. Guiana to Brazil.
- cupreiplaga*. **C. cupreiplaga** Hmps. (= *reniplaga* Hmps., *rufifacta* Dyar) (44 c) is marked very much like *reniplaga*, but of a more lead-grey ground-colour irrorated with red-brown, with a very indistinct, blackish anterior transverse line, a large copper-brown apical spot, the posterior transverse line being also dark, not whitish. Hindwing brown with a copper-red gloss. Expanse of wings: 34 mm. Guiana, Panama.
- modesta*. **C. modesta** Btlr. (44 c) is likewise very similar, red-brown, the large apical spot chocolate-brown, below ending rounded off and at the costal margin intensely strewn with bluish-white; the anterior transverse line is red-brown, the posterior line bordered somewhat with whitish; the ring-macula is a white dot surrounded with brown, the reniform macula with a whitish ring; the subterminal line turns whitish towards the anal angle. Hindwing blackish-brown. Brazil.

138. Genus: **Neocalymnia** Hmps.

This genus only contains one species being externally quite similar to the preceding ones, but the palpi are much shorter, the abdomen shows a basal tuft, and the hind tibiae are not expanded, and like the first tarsal joint above and below hairy.

- obconica*. **N. obconica** Drc. (44 d) is exactly coloured and marked as *Clost. reniplaga* (44 c), but the posterior transverse line is submedianly not so much inwardly angled, and between the very indistinct maculae a distinct brown median line extends. Hindwing blackish-brown. Peru.

139. Genus: **Chalcoecia** *Hmps.*

Separated from the preceding genera by a slightly roundish frontal projection with a feeble transverse keel and a horny plate below it; the scaled thorax exhibits only behind a flat tuft, the abdomen being tufted on the two first rings.

C. emessa *Drc.* (44 d). Forewing greyish-white, in the basal and marginal areas irrorated with purple red, in the anterior half of the median area and postmedianly olive with a coppery tint, with 2 brown curved transverse lines. Hindwing greyish-brown, at the margin darker. Guatemala, Panama.

C. heochroa *Dyar* (44 d) is allied to *emessa*, but smaller and of a lighter colouring. Forewing in the basal area pinkish-violet, the proximal half of the median area olive brown, the distal transverse line in the centre distally bent. Hindwing light straw-coloured, at the margin reddish-brown. Expanse of wings: 27 mm. Panama, Venezuela.

C. patina *Dgn.* Forewing as in the preceding ones divided into 3 areas by 2 curved black lines: basal area Isabel-coloured yellow, towards the anterior transverse line lilac, the latter line on both sides bordered with moss-green, the posterior half of the median area white with 2 lilac discal dots above each other; the posterior transverse line is also on both sides shaded with green, the green colour turning lilac-pink towards the margin, except a white apical patch; hindwing yellowish-white. Expanse of wings: 32 mm. Paraguay.

C. gloria *Schs.* (44 d). Forewing in the basal third purple grey, in the upper half yellowish-red, median area dark grey, in the distal half warming into whitish, towards the costal margin into green, with a large pink spot in the curve of the postmedian line; marginal area olive-green, towards the fringe lighter. Hindwing blackish-brown with yellowish fringes. Expanse of wings: 33 mm. Costa Rica.

C. patricia *Schs.* (44 d) is very similar to *gloria*, but somewhat smaller, and separated by the olive-yellow median area being olive-grey at the costal margin and hind-margin, the distal third being pinkish-brown, strewn with white, at the costal margin olive-brown. Hindwing blackish-brown with darker veins. Expanse of wings: 29 mm. Costa Rica.

140. Genus: **Calymnia** *Hbn.*

This genus being also known as *Cosmia* chiefly occurs in the palearctic and eastern regions where it has been dealt with at large (cf. Vol. 3, p. 330 and Vol. XI, p. 183). The species are distinguished by a smooth frons, a hairy and scaled thorax without tufts, and a tuftless abdomen. In America only 2 species are known so far.

C. orina *Gn.* (= *canescens* *Behr*) (44 d) is very much like the palearctic *trapezina* and is probably to be regarded as its North American representative, being also just as variable; it is at once discernible by the quite light hindwings; forewing light yellow, powdered with reddish-brown, with darker brown transverse lines bordered with light yellowish which colour also surrounds the maculae. — ab. **orinella** *Strd.* (= ab. 1 *Hmps.*) is on the anterior body and forewing irrorated with brown instead of reddish; — in ab. **calami** *Harv.* there is no dark irroration at all, the wings being monotonously light yellow. — ab. **orinula** *Strd.* (= ab. 3 *Hmps.*) (44 d) shows the maculae filled up with blackish-brown, and a similar spot behind the lower cell-end. From Canada to Arizona.

C. cinetes *Dyar* (44 e) is a magnificent species from Mexico; the apex of the forewing is somewhat excised below the apex, blackish-brown with red irroration along the two folds and towards the margin between the veins; transverse lines white, the reniform macula being a white ring with 2 dots above it; hindwing blackish-brown with purple red fringe. Mexico (Zacualpan).

141. Genus: **Phaeoecia** *Dyar.*

The only species was described as *Cirrhophanus*, but later on separated, because the rounded frontal projection is below not extended into a point and the anterior tibiae are without claws.

P. duplicatus *Sm.* (44 e). Forewing light ochreous-yellow, costal margin and cell in the basal half with a coppery red tint, the veins striped orange, without maculae, the transverse lines not very distinct, the posterior line finely dentate, the undulate line being the most distinct, the marginal area behind it darkened. Hindwing yellowish, as on the forewing with an orange marginal line. Expanse of wings: 30 mm. Colorado.

142. Genus: **Cirrhophanus** *Grt.*

Distinguished by a large rounded horny projection on the frons with a raised margin, which at the lower end is extended into a point, below it a horny plate; the scaled thorax exhibits in front and behind loose

tufts, the ends of the shoulder-covers are a little rolled up; anterior tibiae with a curved claw on the inside; abdomen tuftless.

triangulifer. **C. triangulifer** Grt. (= *pretiosa* Morr.) (44 e) has light yellow forewings with orange veins except on the marginal area, with orange transverse lines, the anterior line with very long dents, in the cell-end a forked streak; undulate line faded orange. Hindwing light yellow. Central States as far as Kansas.

dyari. **C. dyari** Ckll. (44 e) is very similar to *triangulifer*, on an average somewhat smaller and paler, separated by the posterior transverse line forming on the lower median branch a tooth proximad, whilst in *triangulifer* it only forms a slight curve. Hindwing lighter than in *triangulifer*, with traces of a darker postmedian line. New Mexico, Arizona.

dubifer. **C. dubifer** Dyar (44 e) is on the forewing of a brighter golden yellow colour, otherwise marked just like the preceding species, the undulate line being whitish, proximally powdered with red-brown; easily recognisable by the brownish-grey hindwing being broadly light yellow at the margin. Mexico.

magnifer. **C. magnifer** Dyar (44 e) differs from the preceding species in its much larger size and lighter yellow ground-colour; the hindwing is yellowish-white, in the disc brownish-grey as far as the very sinuate postmedian line, the distal margin and hind-margin being irrorated with red-brown. Mexico.

nigrifer. **C. nigrifer** Dyar (= *triangulifer* Drc.) (44 e) has quite blackish-brown hindwings in distinction with the otherwise very similarly marked preceding species, with more indistinct and faded transverse markings. Mexico and Guatemala.

chrysochilus. **C. chrysochilus** Dyar (44 f) is a somewhat smaller species, similarly marked as the preceding species, but the ground is densely powdered with purple, only the marginal area remaining somewhat lighter and more yellowish. Hindwing reddish-brown. Mexico.

papago. **C. papago** Barnes (44 f) looks quite differently; the forewing is yellow with orange veins, without maculae, with 2 orange-yellow transverse lines, the posterior line curved a little around the cell-end, without an undulate line. Hindwing yellow, irrorated with brown excepting the hindmarginal portion. New Mexico.

miaiphona. **C. miaiphona** Dyar (44 f) is similar, but more orange-yellow, with dark brown veins except in the marginal area, and with brownish-red transverse lines, the anterior line being rectangularly cornered and here contiguous with the straight median shadow; on the cross-vein an intense red-brown streak, the distal transverse line is only indicated at the costal margin, the undulate line is absent. Hindwing light orange with darker veins. Mexico (Guadalajara).

143. Genus: **Basilodes** Gn.

Recognisable by porrect palpi with a somewhat pendent last joint, a large rounded horny projection on the frons with raised edges and a horny plate below it, thorax clad with rough scales with 2 tufts, the posterior tuft being particularly large; the anterior tibiae exhibit a bent claw on the inside, the abdomen is tuftless. A few American species being partly adorned with gold or silver, exhibiting a somewhat pointed apex of the forewing and relatively broad wings.

philobia. **B. philobia** Drc. (44 f) is very different from the other species, the golden yellow forewing showing 2 very large silvery white spots, whereby it is unmistakable. Hindwing white. Mexico.

pepita. **B. pepita** Gn. (= *chrysopasa* Wkr.) (44 f) has metallic golden forewings with fine brown transverse lines, the posterior line being acute-angled, the maculae also surrounded with brown, the reniform macula proximally with a black dot. Hindwing reddish-brown. Virginia, Florida, Kansas, Colorado, Mexico.

aurata. **B. aurata** Schs. (44 f) is much smaller than *pepita*, otherwise very similar; the golden forewing is densely powdered with brown, the dark brown transverse lines are very fine; the maculae are grey, finely encircled with brown, above the reniform macula another spot, the veins finely striped brown. Hindwing brownish-grey with a golden gloss and white fringe. Expanse of wings: 35 mm. Described according to a ♀ from Costa Rica.

chrysopsis. **B. chrysopsis** Grt. (44 f) is not golden on the forewing, but on the light yellow ground strewn with olive-brown, in the median area excepting the hind-margin, in the costal margin behind it and the distal-marginal area irrorated with olive-brown; the transverse lines are brown, the maculae yellowish, unmarked, the reniform macula proximally with a black dot. Hindwing yellowish-white, at the margin feebly brownish. Colorado, New Mexico, Arizona.

catharops. **B. catharops** Dyar (44 g) has light sandy brown forewings, in the basal area, apex, and anal angle as well as in the maculae golden, the maculae encircled with brown, with brown transverse lines, the proximal line bordering on the golden basal area, the distal line being finely dentate and connected with the apex by an oblique nebulous patch; the undulate line is brown, almost straight. Hindwing light loamy grey, towards the margin darker. Expanse of wings: 40 mm. Texas.

albigutta. **B. albigutta** H.-Schäff. This species and the two next species may hardly belong to this genus, since they are reported to exhibit long pectinations on the male antennae and hair-pencils on the middle tibiae;

they are presumably *Noctuinae*, because the middle radial branch of the hindwing is said to be more strongly developed and removed nearer to the lower branch. We for the present only enumerate the species here, they are not lying before us. Forewing reddish-grey with a slightly curved light, proximally darker shaded oblique line from the apex to the centre of the hind-margin, with a large white ring-macula which is distinctly encircled by dark, and a hardly traceable reniform macula. Cuba.

B. fastigiata *H.-Schäff.* is of a similar ground-colour, the ring-macula only in the male indicated by *fastigiata*. a fine white dot, the undulate line scalariform dark, the oblique line finely red-brown, towards the margin finely yellow. The female is darker strewn excepting a lighter triangle at the apex, the oblique line and an arcuate anterior transverse line distinctly dark brown. Cuba.

B. tristriga *H.-Schäff.* Forewing brownish-yellow, densely strewn with dark, only the two transverse *tristriga*. lines, an oblique line extending from two thirds of the costal margin near the upper cell-angle to the posterior transverse line, and the space behind the undulate line are not strewn and distinctly lighter; the reniform macula is a fine light 8. Fringes of forewing blackish, of hindwing yellowish-grey with small brown vein-spots. Cuba.

144. Genus: **Chamaeclea** *Grt.*

The genus comprises some small beautifully coloured species with slender erect palpi, on the frons with a conical projection with raised margins and a vertically placed longitudinal fillet therein; thorax and abdomen tuftless. Only known from America.

C. pernana *Grt.* (44 g). Forewing light pink, behind the postmedian line ochreous-yellowish, two *pernana*. large spots at the costal margin and the hindmarginal half of the median area are of a deeper lilac-pink colour; the transverse lines are rather indistinctly darker, at the cross-vein a greenish streak, the undulate line whitish, proximally shaded with olive-yellow. Hindwing whitish, towards the margin brownish. Arizona.

C. basiochrea *B. & McD.* (44 g) is very similar to *pernana*, discernible by the ochreous-brownish, not *basiochrea*. pink basal area which is only somewhat hued with purple at the costal margin, by the less distinct posterior transverse line being more deeply angled on the lower median branch; hindwing darker yellowish-brown, towards the margin smoky. Texas.

C. mapensa *Dyar* (44 g) is on the forewing in the basal and marginal areas olive yellow, in the *mapensa*. central area pink with olive-brown, submedianly connected transverse lines and a similar undulate line with olive brown patches on the folds behind it. Hindwing yellowish, distally brown. Mexico (Panuco).

145. Genus: **Calocea** *Dyar.*

Separated from the preceding genus by the absence of the claw on the anterior tibiae, a parted tuft on the prothorax, and a loose one on the metathorax; the frons with a large rough rounded projection without a raised margin. But one species:

C. eucraspedica *Dyar* (44 g). Basal area and centre of costal margin light yellowish-brown, median *eucras-* area bronze-brown, marginal area pink with a darker pink triangular spot at the costal margin, with feeble *pedica*. brown transverse lines and discal dot, the posterior transverse line being double, removed far towards the margin and touching the distal margin in the centre. Hindwing dull brown, at the margin with a pink hue. Mexico (Tehuacan).

146. Genus: **Lythrodes** *Sm.*

Proboscis developed, the short slender palpi straightly porrect; in the horny frontal projection with a raised margin there is above a vertically placed flat fillet, below it a horny plate; the thorax is only clad with hair and tuftless like the abdomen. Exclusively in North America.

L. radiatus *Sm.* (44 g) is a small yellowish-white insect with pink longitudinal stripes in the forewing, *radiatus*. the fringes being speckled red-brown. Hindwing yellowish-white. New Mexico, Arizona.

L. venatus *Sm.* (44 g) may only be a very large and more intensely pink-coloured form of *radiatus*; *venatus*. only the type, a female from New Mexico, seems to be known.

L. tripuncta *B. & McD.* (44 g) is white, on the forewing powdered with light brown, particularly *tripuncta*. in the median and subterminal areas, with brown transverse lines, the anterior one broad, the posterior one feebly dentate; the maculae are indicated by 3 brown dots; undulate line white, dentate. Hindwing white. Arizona.

147. Genus: **Hoplolythra** *Hmps.*

Separated from the preceding genus by more erect palpi, the frontal projection being conical, the central projection roundish, not fillet-shaped; the scaled thorax shows loose tufts in front and behind, the anterior tibiae inside with a slender spine at the end. Only 2 species:

- arivaca.* **H. arivaca** *Barnes* (44 h). Anterior body and forewing yellowish white; in the distal half of the median area red-brown bordered by brown lines, and with small maculae encircled with black; the anterior transverse line on the hindmarginal vein reverted towards the base. Hindwing yellowish-white, at the margin brownish. New Mexico.
- discistriga.* **H. discistriga** *Sm.* (44 h). Forewing yellowish-white with finely red-brown striped veins and folds, towards the margin somewhat thicker, the fringes being speckled. Hindwing golden yellow. California, Arizona.

148. Genus: **Pumora** *Dyar.*

Structure not dissimilar to the preceding genus, the tibial spine on the inside is large, but thick, not slender, the central projection of the conical frontal appendage touches the somewhat cordiformly cut out lower margin; no tufts on the roughly scaled thorax. Only 1 species:

- hyperion.* **P. hyperion** *Dyar* (44 h) is an easily discernible, small bronze-black insect with an orange-yellow head and thorax and a similar broad median band and basal area on the forewing. Mexico (Cuernavaca).

149. Genus: **Argyrrhoda** *Hmps.*

This genus likewise contains but one small species of a structure very similar to the preceding ones, but the proboscis is stunted, the frontal projection almost as in *Hoplolythra*, the thorax clad with hair mixed with scales, tuftless, the anterior tibiae thickened.

- laronia.* **A. laronia** *Dre.* (44 h). Forewing silvery white with yellowish brownish transverse stripes and the cell filled up with carmine and a similar posterior transverse stripe. Hindwing light brown, with a faded subterminal band. Mexico.

150. Genus: **Satrapodes** *Hmps.*

The large rounded horny appendage on the frons has no central projection, but a horny plate under it; the slender erect palpi are somewhat longer than in *Argyrrhoda*; the thorax is almost only clad with scales and tuftless like the abdomen. The apex of the broad forewing is almost falciform. Two species described from Mexico:

- mina.* **S. mina** *Schs.* (44 h). Forewing metallic golden yellow, powdered and strewn with olive-brown, with fine brown almost acute-angled transverse lines and silvery white maculae; the feeble whitish undulate line is proximally shaded with brown. Hindwing brown with a golden gloss. Mexico.
- dosca.* **S. dosca** *Dyar* (44 h) is larger and has broader wings, more olive-greenish golden, the white reniform macula is situate in a black spot. Hindwing dark brown. Mexico (Zacualpan).

151. Genus: **Neophaeus** *Dyar.*

Here the palpi are still somewhat longer, the horny frontal projection as in the preceding genus, but still farther removed towards the vertex; thorax clad with rough scales, tuftless, the anterior tibiae on the inside at the end with a long claw. Only 1 species:

- chalcospilans.* **N. chalcospilans** *Dyar* (44 h) has a somewhat produced apex of the forewing and below it an excised distal margin; bronze-brown, strewn with white, with a fine brown postmedian line which is rectangularly flawed behind the upper cell-angle, with no other markings. Hindwing white with a silky gloss, costal and distal margins light brown. Expanse of wings: 31 mm. Mexico.

152. Genus: **Chalcopasta** *Hmps.*

Very similar to the preceding genera, with a well developed proboscis and the same frontal projection with a horny plate under it; the palpi are porrect and rather long-haired; the thorax is clad with rough scales, in front and behind with loose tufts, the apices of the shoulder-covers rolled somewhat upward, abdomen tuftless; the anterior tibiae at the ends inside with a very long strong claw. Several beautiful species decorated with large golden spots, all from America, partly very hard to discern.

C. *arianda* *Drc.* (44 i). Forewing as in all these allied species metallic greenish golden, at the costal *arianda*. margin whitish, irrorated with red-brown, here with a reddish-brown quadrangular spot in the place of the ring-macula, and a more triangular one at the cell-end with an inwardly bent lower end, therein the strangulated reniform macula encircled with red-brown, with some golden scales at the inner margin; base of hind-margin likewise reddish-brown, fringe speckled white and brown. Hindwing white, at the margin hued with reddish brown. Mexico.

C. *riandana* *Dyar* (44 i) is somewhat smaller and neater; the small quadrangular spot before the centre *riandana*. of the costal margin is absent, the reniform macula is on the median not so far inwardly produced, the basal hindmarginal spot is larger, extending to the centre of the hind-margin and despatching a continuation upward as far as the median. Mexico (Tehuacan).

C. *territans* *Edw.* (= *arizona French*) (44 i) is the most similar to *arianda* and differs in the reniform *territans*. macula being situate in the brown triangular spot and being greenish-golden with a red-brown line in the centre; the median is white, the basal hindmarginal spot small; hindwing quite white with a fine red-brown marginal line. Arizona.

C. *chalcophanis* *Dyar* differs from *territans* in the absence of golden colour in the reniform macula; *chalcophanis*. the forewing is relatively broad, the reniform-macular appendage of the brown costal-marginal stripe is intensely irrorated with white, also in the basal third of the cell a short brown appendage extends downward; a series of small feeble brown submarginal spots is more or less distinct as in nearly all the species. Hindwing of a pure yellowish-white, without a distinct marginal line. Separated from the following, likewise very closely allied species by the hardly projecting frontal appendage. Mexico (City), taken in August.

C. *anopis* *Dyar* (34 i) has a much more distinctly projecting frontal appendage; it is somewhat *anopis*. smaller, with narrower wings; the brown costal margin is more intensely mixed with white, its widening behind the cell is only slight, the reniform macula itself brown mixed with white, the hindmarginal spot also very much mixed with white. Expanse of wings: 30 mm. Mexico (Cuernavaca), in September.

C. *howardi* *Edw.* (= *ornata Ottolengui*) (44 i) is also extremely similar to the preceding species, the *howardi*. basal area is more extensively brown and white with only a small golden wedge-shaped spot which is distally bordered by a red-brown antemedian line. Hindwing towards the margin somewhat more intensely powdered with reddish-brown. Arizona.

C. *sinuata* *Hmps.* (44 i) has broad wings and brown hindwings; the brown basal area is extensive, *sinuata*. the distal bordering very oblique extending to behind the centre of the hind-margin and prolonged as a fine brown hindmarginal stripe into the distal margin; in the brown basal area which itself is golden scaled, there is in the base of the cell a golden spot; behind the latter the brown colour projects far towards the margin; before the upper marginal half there is a narrow brown areolate spot. Mexico (Zacualpan).

C. *pterochalcea* *Dyar* (44 i) entirely resembles *riandana* from which it is separated by ciliary plain *pterochalcea*. antennae in the male. Hindwing somewhat more intensely strewn with brown, with a feeble darker subterminal shadow. Mexico (Tehuacan).

C. *restricta* *Hmps.* (44 k) is very much like *pterochalcea*, at once discernible by the brown hindwing *restricta*. with a lustrous coppery marginal half; the golden basal spot does not extend below the submedian fold. Mexico (Tehuacan, Guerrero).

C. *ellica* *Dyar* (44) has narrower wings, more powdered, not so lustrous, and easily discernible from *ellica*. its allies by the brown reniform-macular spot being continued obliquely proximad to the centre of the hind-margin in the shape of a greyish-brown, distally dentate median shadow. Hindwing brownish-grey with a whitish fringe. Mexico (City).

C. *fulgens* *B. & McD.* (44 k) is similarly marked as the preceding species, but of quite a different *fulgens*. colouring, golden yellow, somewhat metallic, more like the large species of *Stiria*, the costal margin and the reniform-macular spot strewn with purple white, in the latter the reniform macula is indicated by somewhat less white irroration, the large purple basal spot does not reach to the costal margin. Hindwing whitish, distally smoky. Arizona.

C. *acantha* *Drc.* (44 k) is a smaller species with dark brown forewings and recognisable by the oblique *acantha*. central golden spot flowing together with a subterminal band which is more or less broken up into small spots; at the base there is another large golden spot. Hindwing dark reddish-brown. Mexico and Guatemala.

- chalcotoxa*. **C. chalcotoxa** Dyar (44 k) is similar to *acantha*, but the subterminal golden spotted band is absent or indicated at most by one or two very small golden spots at the apex. Mexico (Tehuacan).
- acema*. **C. acema** Drc. (44 k) is smaller than the preceding species, otherwise very similar; the golden oblique band below the cell to the anal angle is much broader and of a quadrangular shape, in *chalcotoxa* narrow and of an elliptic rounded shape; the reniform macula is somewhat more distinctly prominent, above and below centred with a small golden spot. Mexico (Guerrero).
- dysnoa*. **C. dysnoa** Dyar (44 k) has very broad, deep bronze brown forewings without golden spots, with a somewhat more produced apex and a slight excision below it; the fine transverse lines are somewhat darker, the reniform macula is an indistinct small darker spot. Hindwing dark brown. — ab. **biforis** ab. nov. (44 l) has the ring-macula and the lower end of the reniform macula centred with silvery white round spots. Mexico.
- chalcocraspedon*. **C. chalcocraspedon** Dyar (44 l) is another species very different from the others, with purple brown forewings, the basal and marginal areas being metallic bronze-coloured, with fine darker transverse lines, the maculae indicated by small bronze spots. Hindwing brownish-grey with a lighter postmedian band. Mexico (Zacualpan).
- koebeli*. **C. koebeli** Riley (44 l) is unmistakable owing to the silvery white forewing with 3 reddish-yellow transverse lines, the postmedian line being on the discal fold connected with the subterminal line which is removed far towards the margin; the space behind the latter line is tinted yellowish. Hindwing light brown. Known from Kansas and California.

153. Genus: **Rolua** Dyar.

On the whole corresponding with *Chalcopasta*, but the frontal appendage exhibits instead of the central projection a vertical fillet in the middle, and the raised margin is only below and laterally present, above the projection is not margined. Only 1 species:

- monetifera*. **R. monetifera** Dyar (44 l) has fox-coloured forewings with dark veins and 2 large silvery spots, a smaller obliquely elliptic one in the cell and a much larger, more triangular one behind it, which may also be connected with each other: — ab. **coalescens** ab. nov. (44 l). — Hindwing black. Mexico (Zacualpan).

154. Genus: **Chalcamistis** Dyar.

Separated from the preceding genus by the stunted proboscis and smooth frons without an appendage; the palpi are the same; thoracal scales much narrower, more hair-like, also with tufts on the pro- and meta-thorax, and with upturned ends of the shoulder-covers. Abdomen with a basal tuft. But one species:

- autoplusia*. **C. autoplusia** Dyar (44 l). Forewing purple brown, behind the bronze-sealed median area lighter purple with fine brown transverse lines nearing each other at the hind-margin; the maculae are of a bright golden bronze colour. Hindwing blackish-brown with a bronze reflection. Mexico (Zacualpan).

155. Genus: **Neumoeenia** Grt.

The species of this American genus being all extremely similar offer great diagnostic difficulties. Closely allied to the *Chalcopasta*, but separated by erect palpi, a rounded frontal appendage without a raised margin and central appendage, but with a transverse fillet above it; thorax and abdomen tuftless.

- poetica*. **N. poetica** Grt. (45 a). Head and collar yellowish-white, thorax brown; forewing metallic green with a broad yellowish-white costal-marginal area, marginal line and fringe, the end of the median vein and its branches rising from the lower cell-angle are likewise broadly white. Hindwing feebly brownish. Oregon.
- smithi*. **N. smithi** Drc. (45 a) is very near to *poetica*, the costal-marginal stripe is of a purer white, still broader, behind the cell-end the green ground-colour projects somewhat dentiformly, before the margin the white colour expands still more almost in a triangular shape, and contains above the uppermost radial branch at the margin a small triangle of the green ground-colour; the end of the median vein and its branches together form a large, distally three-pronged spot. Hindwing greyish-brown. Mexico (Durango, Guerrero, Tabasco). — **sagittalba** *Ottolengui* is the northern form from Arizona, and is separated by somewhat reduced white markings.
- albarena*. **N. albarena** *Ottolengui* is a larger, somewhat more slender species; the white costal-marginal stripe is upwards more intensely strewn with brownish, almost equally broad as far as the distal margin, the median

vein more extensively white and on the lowest radial branch finely continued to the margin; the other branches are but slightly white at the place where they rise. Hindwing of a purer white. Expanse of wings: 30 mm. Arizona. — **bellamusa** Dyar (45 a) is larger, the white markings somewhat broader, particularly the branches *bellamusa*. at the lower cell-end more distinctly white, so that a tricuspidate marking is produced with a middle tooth extending to the margin. Hindwing somewhat more brownish. Mexico (Zacualpan).

N. **coronides** Drc. (45 a) is the largest species, green with a more brass-like gloss, the costal-marginal *coronides*. stripe more mixed with brown, like the fringes, the median not white, at the lower cell-end a minute white spot strewn with brown. Hindwing more brownish. Mexico (Zacualpan, Guerrero). — **pendula** Ottolengui, on *pendula*. the contrary, like the other species from Arizona, is a more intensely white form, particularly the cellular spot is of a purer white.

156. Genus: **Psectrotarsia** Hmps.

Distinguished from *Chalcopasta* by the rounder frontal projection with a raised edge, but without the central appendage, with somewhat shorter, but also porrect palpi and a purely haired thorax without tufts, the abdomen being tuftless, too. The anterior tarsi exhibit outside on the first joint a row of 7 spines. Only 3 species have been described.

P. fuscirena Hmps. (45 a). Forewing yellowish-white, strewn with brown, the median area of a bright *fuscirena*. lemon-colour, the margin light yellow, the maculae are in white rings and strewn with brown, the reniform macula is centred with blackish. Hindwing of a pure white. Argentina.

P. flava Dgn. (45 a) has quite yellow forewings being powdered with red-brown only at the costal *flava*. margin and postmedianly, with reddish-brown transverse lines, the posterior line being finely dentate, the maculae are feebly marked with red-brown. Hindwing light yellow with a darker central luna and subterminal band. Peru.

P. tamsi Giac. is as large as *fuscirena*; forewing above uniformly coloured fine light greenish-ochreous, *tamsi*. hindwing white with a brownish marginal band. Argentina.

157. Genus: **Enargia** Hbn.

Proboscis developed, palpi erect, frons smooth, thorax only clad with hair, and tuftless like the abdomen; but the latter at the base and laterally hairy. Beside several palearctic species also a North-American species is known. As to further particulars cf. Vol. III, p. 233.

E. decolor Wkr. (45 a). Forewing orange-red, strewn with brown, with brown transverse lines and *decolor*. a broad brown postmedian shadow as far as the lower cell-end; the large maculae are surrounded by brown, the reniform macula with a blackish spot at the lower cell-end. Hindwing light yellow with a reddish tint. A very variable species. — **infumata** Grt. is densely strewn with a brownish grey. — **mia** Strd. (= ab. 2. Hmps.) *infumata*. has much lighter yellowish-white forewings but feebly speckled dark. — **sia** Strd. (= ab. 3. Hmps.) is also light *mia*. *sia*. yellow, but strewn with red-brown and with reddish markings. From Canada to California.

158. Genus: **Derrima** Wkr.

The genus contains but one small, rather slim species distinguished from the preceding one by a slight roundish frontal projection with a horny plate below it; the hairy thorax is covered with scales and tuftless, like the abdomen. The anterior tibiae exhibit inside one claw and outside 2.

D. stellata Wkr. (45 b). Thorax pinkish crimson, forewing olive-yellow, at the costal and distal margins *stellata*. broad pink, in the disc with 2 silvery white small spots in black rings, and before the pink marginal area with a subterminal row of small white spots. Hindwing on the yellowish ground densely powdered with pink. — In the form **henrietta** Grt. the two small discal spots are likewise in pink rings, the row of white spots is *henrietta*. less prominent, and the hindwing is not pink but ochreous yellow. — In **cinocentralis** Strd. (= ab. 1. Hmps.) *cinocentra-* the proximal one of the two small discal spots is centred with grey. From Massachusetts and New York to *lis*. Florida.

159. Genus: **Stiria** Grt.

The chief characteristic mark of this genus is the large horny frontal projection, shaped like a reverse heart, with raised edges, the lower edge being extended into a somewhat upturned point, below it a horny plate; proboscis developed; palpi rather porrect; thorax clad with large rough scales, in front and behind with loose tufts, the ends of the shoulder-covers somewhat upturned. The anterior tibiae exhibit inside at the end a long bent spine. Abdomen tuftless. Several species partly very difficult to separate, from North and Central America.

- rugifrons*. **S. rugifrons** Grt. (45 b) is one of the largest species with yellow forewings scantily strewn with brown, a brown spot in the centre of the hind-margin and an oval one in the centre of the distal margin, the maculae and transverse lines indistinctly marked with brown. Head and thorax yellowish-white, thorax brown, intermixed with white and black scales. Hindwing yellowish-white with a reddish-brown marginal line. From Kansas to Colorado and New Mexico.
- ischune*. **S. ischune** Dyar. (45 b) is very similar; but the head and collar of a brighter yellow, the thorax more purple grey; the much larger hindmarginal and distal-marginal spots are strewn more with purple grey. Hindwing and abdomen dark greyish-brown. Mexico (Tehuacan).
- intermixta*. **S. intermixta** Dyar (45 b) is the intermediate species between the two preceding ones, the quadrangular hindmarginal spot is small, the hindwing is whitish in the disc, at the costal and distal margins broadly greyish-brown with light fringes. Mexico (Zacualpan).
- mouris*. **S. mouris** Dyar (45 b) is well characterized by purely white hindwings with a but narrow purely grey marginal line, the ♀ hindwing being somewhat more broadly powdered with grey at the margin; basal, distal-marginal and hindmarginal spots of the forewing are purple grey without a brown tinge, and on the hindmarginal vein, on the inside of the narrow hindmarginal spot, the yellow colour bends inward pointedly, whereas in all the other species the brown colour projects here pointedly towards the base; the basal spot is very large. Mexico (Tehuacan).
- colimae*. **S. colimae** sp. n. (45 b) has comparatively short and broad forewings of a very light yellow lustrous metallic colour, the hindmarginal spot being contiguous with the basal spot, both being light purple grey like the very broad distal-marginal spot which projects above the submedian fold almost rectangularly to the margin, where it forms again a right angle. Hindwing dull greyish-brown. Mexico (Colima). Type in the Coll. DRAUDT.
- ruficeps*. **S. ruficeps** sp. n. (45 b) forms the transition from *ischune* to the following *sisaya* and is easily discernible by the rusty yellow head and base of collar, as well as by the much darker coffee-brown hindwing; distal-marginal and hindmarginal spots larger than in *sisaya*, less distinctly and precisely defined. Mexico (Zacualpan); type in the Coll. DRAUDT.
- sisaya*. **S. sisaya** Dyar (45 c) is very closely allied to the following *sulphurea*; the colour of the forewing is a deeper yellow, the thorax is more grey than brown, the hindmarginal and distal-marginal spots are larger, and the hindwing is brownish-grey with yellowish-white fringes. Mexico (Tehuacan, Zacualpan, City).
- sulphurea*. **S. sulphurea** Neum. (45 c). Head and collar light yellow, thorax reddish-brown; forewing greenish-yellow with the 3 spots as in the preceding species, the hindmarginal spot finely and more distinctly bordered with a darker colour, the distal-marginal spot very narrow, its proximal border slightly bow-shaped, not twice angled. Hindwing white, with a faint reddish-brown tint, at the margin somewhat darker. Arizona. — ab.
- demaculata*. **demaculata** Strd. (= ab. 1. *Hmps.*) is a form in which the dots of the maculae and of the posterior transverse line are absent except a small discal dot.
- consuela*. **S. consuela** Streck. Thorax ash-grey, head, collar and forewing greyish-white, towards the margin warming into a purple grey, at the base feebly tinted yellow with a large grey spot in the centre of the hind-margin, a uniformly bent postmedian line being only angular below the costal margin, and a small discal dot. Hindwing purple grey with purely white fringes. Expanse of wings: 34 mm. Arizona.
- tachymora*. **S. tachymora** Dyar (45 c) has a yellow head and collar, a purple brown thorax and olive-grey forewings being narrowly yellow at the margin, distally shaded with red-brown, with a brownish-black transverse band through the centre of the wing, with dark purple brown fringes. Hindwing dingy white, the margin not being darkened. Expanse of wings: 36 mm. Mexico (City).
- hutsoni*. **S. hutsoni** Sm. (45 c) is a very small species with olive-grey forewings with a white median band not quite reaching to the costal margin, a postmedian band obliquely extending from the apex into the hind-margin, a postmedian band extending quite obliquely from the apex into the hind-margin, as well as a very obsolete light marginal band. Hindwing blackish-brown. California, Arizona. — In ab. **fuliginosa** Sm. the whitish median band is absent.
- olivalis*. **S. olivalis** B. & McD. (45 c) is allied with *hutsoni* but larger; forewing white, feebly tinted olive with 3 olive-green transverse bands, the most anterior one in the upper half dentate and narrow, the distal one divided into 3 spots. Hindwing smoky-brown. California.
- itycis*. **S. itycis** Dyar (45 c) exhibits quite a different colouring and marking; forewing yellow, at the base of the hind-margin broadly shaded with brown, with fine brown transverse lines, the distal one behind the upper cell-angle as far as close before the margin acute-angled; the maculae are large rings finely surrounded with brown. Hindwing brownish-grey. Mexico (Zacualpan).
- argyropolia*. **S. argyropolia** Dyar (45 c) is marked like *itycis*, but the ground-colour is a very light silvery grey, the transverse lines are finely bronze-brown, bordered with yellow; the brown basal shading is entirely absent, and the maculae are mostly quite absent or only very feebly indicated. Hindwing yellowish-white. Mexico (Zacualpan).
- phalaenoides*. **S. phalaenoides** Dyar (45 c) is similar to the preceding species, but the forewing is yellowish-white, in the hindmarginal half strewn with grey, the costal margin is narrowly ochreous-brown and the transverse lines of the same course as in *argyropolia*; at the cross-vein there is a feeble curved line. Hindwing light greyish-brown. Expanse of wings: 26 mm. Mexico (Zacualpan), taken in September.

160. Genus: **Xanthiria** *Hmps.*

The only species is much more slender and with broader wings than the preceding genus, the frons exhibits a plain roundish projection with a horny plate below it; the thorax is clad with hair intermixed with scales, prothorax tuftless, metathorax with a loose tuft, abdomen tuftless. The tibial claw is small and thin.

X. primulina *Drc.* (45 d) is on the forewing bright yellow with a deep red-brown spot at the base *primulina*. of the hind-margin, fine brown transverse lines, and several cellular dots. Hindwing light brownish with yellow fringes. Mexico.

161. Genus: **Stiriodes** *Hmps.*

Distinguished from *Stiria* by the absence of the proboscis and by the frons showing a rounded projection with a flat transverse plate in the centre and a bent horny plate below it; the thorax is chiefly clad with scales, the tufts as in *Xanthiria*. Quite a number of mostly small species from North America and Mexico have been described.

S. obtusa *H.-Schäff.* (= *obtusula* *Zell.*) (45 d). Forewing of a bright yellow, powdered with red- *obtusa*. brown except the marginal area, with a few red-brown spots, 3 of which at the costal margin are large; before the distal margin a row of smaller spots. Hindwing yellowish white, feebly powdered with brownish, with traces of 3 extinct transverse lines. Central United States as far as Texas.

S. perflava *Harv.* (45 d) is somewhat larger, lighter yellow, and exhibits behind the centre of the *perflava*. hind-margin a large conical red-brown spot. The hindwing is of a purer white, towards the margin with a slight yellowish tint. Texas.

S. demo *Drc.* (45 d) resembles *perflava*, but it has dark brown hindwings with yellow fringes; the *demo*. forewings are of a brighter yellow, with a double posterior transverse line, the proximal portion of which is divided into dots, the distal one being dentate, followed by a subterminal row of dots, the fringes being dotted red-brown. The female is lighter yellow, the hindwing straw-coloured, with darker veins and 3 darker faded transverse bands. Mexico (Guerrero, Tehuacan).

S. condistica *Dyar* (45 d) is extremely similar to *demo* and may only be a form of it; the yellow colour *condistica*. is deeper, the red-brown spots are larger, the spot in the centre of the hind-margin being triangular; the forewing exhibits below the apex a shallow concavity, below it a slight projection on which the fringe is yellow, below it and above it more or less red-brown. Mexico (Zacualpan, Cuernavaca).

S. procida *Drc.* (45 d, e). Forewing ochreous-yellow, feebly powdered with red-brown, at the base *procida*. and postmedianly more intensely strewn, with indistinct double transverse lines, on the sides facing each other with dark dots, and with one dark brown triangular spot each at the costal margin, in the middle, and before the apex; from the former an interrupted median shadow proceeds. Hindwing dark brown with yellow fringes. The female is lighter yellow, without any brown. Mexico.

S. subserviens *Dyar* (45 e) is similar to *procida* and of the same ground-colour, but with longer wings *subserviens*. and a much more robust structure; the transverse lines are not double, but single, broadly flown out; both the maculae are indicated. Expanse of wings: 22 mm. Mexico (Orizaba).

S. umbria *Drc.* (45 e) is likewise similar, but with much broader wings and in the male of a deep red- *umbria*. brown colour, the female being loam-coloured; transverse lines as in *procida*, but more indistinct, only the beginnings at the costal margin are darker; the dark spot in the centre of the costal margin is absent, only the subapical one is present. Mexico and Guatemala.

S. nydar *Dyar* (45 e) is like the preceding ones, but larger, with more indistinct and much more bent *nydar*. transverse lines, the median line being the most indistinct, the total colouring more olive-brown; hindwing lighter, towards the base more yellowish with a small, more prominently dark median spot. Mexico (Zacualpan).

S. nepotica *Dyar* (45 e) is the smallest species; forewing brownish-ochreous, excepting the median *nepotica*. area and the margin shaded with dark brown, with 2 brown costal-marginal spots and 2 quite indistinct transverse lines being only indicated by rows of dots. Hindwing blackish with yellow fringes. Expanse of wings: 16 mm. Mexico (Oaxaca).

S. virida *B. & McD.* (45 e) looks quite different and resembles more a *Stiria hutsoni*; forewing *virida*. yellowish-white, in the basal and marginal areas powdered with a dull green, with 2 oblique green transverse bands, the proximal one of which, being twice as broad as the distal one, occupies the whole median area, though it does not reach to the costal margin; the light fringes are speckled darker. Hindwing smoky brown with lighter fringes. Described from California.

162. Genus: **Cirrodistis** Dyar.

Proboscis developed, the rounded frontal projection exhibits a shovel-shaped appendage in the centre and below it a horny plate with pointed ends. Thorax clad with hair-like scales, without tufts. Forewing with an almost falciform apex, at the distal margin with two considerable excisions, in the middle between them with a projection. But one species:

- benedicta*. **C. benedicta** Dyar (45 e). Forewing yellow with a brown basal area, a feeble median line and a narrow double postmedian line approaching the distal margin. Hindwing yellowish with a dark median line and a distally dentate postmedian shadow. Under surface very variegated, marked with brown. Mexico (Zacualpan).

163. Genus: **Bistica** Dyar.

This genus contains but one peculiar small species which may be identical with *Mychnia noela* described by DRUCE as a Geometrid, for which reason DYAR cautiously chose the same name for the species. It is not dissimilar to the preceding species, from which it differs in the truncated conical frontal projection with a raised margin and central apex; metathorax and abdomen each exhibit one small tuft. The forewing of the small slim species has a rather deep excision below the apex.

- noela*. **B. noela** Dyar (*Drc.*?) (45 e). Forewing ochreous-yellow, in the basal area bronze gold, bordered with brown, with fine brown transverse lines, behind the anterior line in the lower half a golden area, behind it a broad postmedian shadow and a cellular spot. Hindwing grey. Mexico (Tehuacan).

164. Genus: **Chrysoecia** Hamp.

A genus of a somewhat doubtful position, but best ranged here; the frontal projection is apparently not constant; HAMPSON mentions a rounded projection with a vertically placed median listel, whilst North American and Mexican specimens of *scira* show a strong truncated conical central projection which is above deeply hollowed out, beneath it a transverse listel; in *requies* the transverse listel is strongly developed. The thorax is composed of a mixture of hairs and scales, behind with a flat tuft, the abdomen is tuftless. The anterior tibiae exhibit a feeble spine on the outside. The middle radial branch is so feeble that I also range here *requies* having been placed to *Protarache* (*Erastrinae*) by HAMPSON.

- scira*. **C. scira** Drc. (45 f). Forewing reddish-yellow, in the median area powdered with dark brown, in the marginal area yellowish-white, the transverse lines strewn with silvery blue; the maculae are olive-yellowish, centred with silvery blue. Hindwing blackish-brown with white ends of the fringes. Mexico, recently also found in Arizona, here in a much smaller form, with an expanse of only 28 to 30 mm, whilst in Mexico it attains *benjamini*, 36 mm. For the Arizona-form the name: **benjamini** Hill. may be used.

- gladiola*. **C. gladiola** Barnes (45 f) is a not dissimilar but much smaller species, distinguished by a large oval yellowish-white spot in the disc. The colouring and marking are otherwise very similar. Arizona.

- requies*. **C. requies** Dyar (45 f) is very similar and easily discernible by the much smaller yellowish-white discal spot showing more the shape of a horizontal crescent and with an upward concavity. Mexico (Zacualpan).

165. Genus: **Polenta** Morr.

Very closely allied to the preceding genus and distinguished by the cordiform frontal projection with a raised edge which at its lower end is prolonged into a point. The thorax is chiefly clad with scales and exhibits behind a loose tuft; all the rest corresponds with the preceding genus, also the tibial spines. But one species:

- tepperi*. **P. tepperi** Morr. (= *richii* Grt.) (45 f). The whitish forewing is densely powdered with olive-brown, the straight transverse lines are white, behind the distal line there is at the costal margin a dark olive-brown triangular spot. Hindwing light brown. Colorado, Texas, Arizona.

166. Genus: **Plagiomimicus** Grt.

Separated from the preceding genus by more porrect palpi and the frontal appendage representing a large round projection provided with a ring-enclosure, with a horny plate below it; anterior tibiae short and broad, with a large bent claw-like spine at the end, inside and outside a smaller one. — Exclusively American.

P. pitychromus Grt. (= *media* Morr.) (45 f) on the whole resembles *P. tepperi*, but it is of a more reddish-brown tint and is distinguished by the presence of dark brown white-ringed maculae. Hindwing greyish-brown. From New York to Texas and Colorado. *pitychromus*.

P. triplagiatus Sm. (45 f) is smaller than the preceding species, distinguished by hardly traceable maculae and a dark brown triangular spot between them; before the lower half of the undulate line there is a blackish-brown oblong wedge-shaped spot. Hindwing light brown, at the margin somewhat darker. Colorado. New Mexico, Arizona. *triplagiatus*.

P. laverna Drc. (45 g) is still smaller, darker brown, strewn with white, similarly marked, the maculae surrounded by white, the ground between them not darkened, behind the distal transverse line with a black triangular spot strewn with white. Hindwing dark red-brown. Mexico. *laverna*.

P. expallidus Grt. (45 g) is a lighter yellowish-white species strewn with olive-brown, with indistinct double transverse lines and a faded olive-brown discal shadow, instead of the maculae there are only dots in the cell; the feeble whitish undulate line is proximally shaded with brown; hindwing white, at the margin brownish. Montana, Colorado, Durango. *expallidus*.

167. Genus: **Nocloa** Sm.

Distinguished from the allied genera by the absent proboscis, the very short erect palpi, the frons exhibiting a large round horny projection in the middle, with a truncated central appendage; the scaled thorax exhibits only behind a loose tuft, the abdomen shows one on the first ring; the anterior tarsi are short with very long claws. A number of partly rather dissimilar species have been described, all from America.

N. plagiata Sm. (45 g) has red-brown forewings with a black spot behind the base of the hind-margin, a small oblong one instead of the coniform macula and a triangular one at the costal margin before the undulate line; the red-brown transverse lines are on the averted sides bordered with a lighter yellowish colour, the maculae are in feebly lighter rings. Hindwing whitish, towards the margin feebly tinted red-brown. Arizona. *plagiata*.

N. rivulosa Sm. is dull ochreous yellowish with fine, distinct, darker olive-brownish double transverse lines, the anterior line very sharply dentate; between the indistinctly marked maculae an intense median shadow extends; the light undulate line is proximally shaded with dark, behind it the marginal area is alternately striped dark and light. Hindwing whitish, at the margin darker. California, Arizona. *rivulosa*.

N. pallens Tepper (= *nesaea* Sm.) (45 g) is a very plainly marked species, yellowish-white with a faded olive median band, the marginal area feebly tinted olive. Hindwing white, at the margin tinted olive. From Utah to California and Arizona. *pallens*.

N. cordova Barnes (45 g), originally described as *Xanthia*, exhibits yellow forewings, in some places, particularly in the median area at the costal margin, powdered with brown, with fine darker transverse lines, the posterior line dentate and with yellow maculae in the yellow ground of the cell; the undulate line is marked by small darker internerval spots. Hindwing diaphanous yellowish-white, at the margin hardly darker. Arizona. *cordova*.

N. alcandra Drc. (45 g) is somewhat similar, of a purer golden yellow, strewn with orange-red, the basal part of the costal-margin and the cell powdered with purple red-brown, the veins striped red-brown, with red-brown transverse lines and very large maculae strewn with orange-red and surrounded with red-brown. Hindwing yellowish-white. Mexico. *alcandra*.

N. lamiota Dyar (45 g) is much smaller and more slender than *alcandra*, the basal half obliquely cut off, more intensely darkened by red-brown, the distal half of the wing of a purer golden yellow, only at the margin darkened; the transverse lines are somewhat more dentate. Hindwing whitish with a brown marginal line. Mexico (Cuernavaca). *lamiota*.

N. beata Dyar (45 h). Forewing white, marbled and marked with dark coppery brown, the transverse lines submedianly connected, the anterior line forming 3 large bows, the posterior line feebly double and with large maculae in double rings; the fine undulate line is dentate. Hindwing white with a brown marginal line. Mexico (Zacualpan). *beata*.

- aliaga*. **N. aliaga** *Barnes* (45 h) has light yellow forewings feebly marked with orange, with single small spots indicating the transverse lines. Hindwing yellowish-white with a brown marginal line. New Mexico.
- ezeha*. **N. ezeha** *Dyar* (45 h) is larger than *aliaga*; by the somewhat more developed marking it forms the intermediary between *aliaga* and the following *nanata*. Wings comparatively broad and short, light yellow, strewn somewhat with orange, with dull purple brown spots between the maculae and before the dentate posterior transverse line, as well as between the veins in the marginal area. Hindwing light yellowish. Mexico (Sierra de Guerrero).
- nanata*. **N. nanata** *Neum.* (= *macula Sm.*) (45 h) is smaller than *ezeha*, the forewings are light orange and more intensely marked purple grey, the more or less confluent spots almost form the figure of a very flat bow. Hindwing purple brownish-grey, with a yellow margin and fringe. New Mexico, Mexico.
- periodita*. **N. periodita** *Dyar* (45 h) also belongs yet to the preceding group, but the wings are almost entirely powdered with purple grey, only the postmedian area being broader yellow, strewn with red; crossed by the purple grey veins, the marginal area being again purple; 2 small yellow lunae indicate the situation of the anterior transverse line, the large maculae are marked by feeble yellow borders. Hindwing purple grey. Mexico (Tehuacan).
- pilacho*. **N. pilacho** *Barnes* (45 h), originally described as *Hemiceras*, belongs hereto. Forewing dull straw-coloured with fine transverse lines extending almost in the same way as in *alcandra*, and very feebly surrounded maculae. Hindwing yellowish-white. From Southern Arizona.
- dissimilis*. **N. dissimilis** *B. & McD.* (45 i) looks quite different, rather like a *Hadenida*, but owing to its anatomical marks it belongs to this genus. Forewing light olive-brown, strewn with a darker velvety colour, with black transverse lines bordered with whitish and yellowish, the maculae being surrounded with white, the discal area usually powdered with blackish; the subterminal area is lighter olive with a bronze tint. Hindwing smoky brown. Arizona.
- torniplaga*. **N. torniplaga** *B. & McD.* (45 i) exhibits a more feeble frontal projection, but it is closely allied to *dissimilis*. Forewing darker velvety brown, in the basal and subterminal areas somewhat lighter, in the latter area, particularly in the lower half, light yellowish; transverse lines blackish, maculae lighter in the dark ground of the cell. Hindwing whitish, distally smoky. Arizona.

168. Genus: **Heminocloa** *B. u. Benj.*

This genus was only recently established for *mirabilis* having been described as *Basilodes*. It is very closely allied to *Nocloa* and shows a similar frontal projection, but the central appendage is not stunted but rounded off; the anterior tarsi are of the usual length; the anterior tibiae are not armed.

- mirabilis*. **H. mirabilis** *Neum.* (45 h). Forewing light greenish with a large dark green triangular spot at the base of the costal margin and a smaller one at the apex; transverse lines white, the posterior line as well as the undulate line bordered with dark green; maculae absent except a dark cross-vein streak; at the anal angle there is yet a dark green spot. Hindwing silvery whitish-grey, at the margin smoky. Arizona.

169. Genus: **Oslaria** *Dyar.*

Very closely allied to *Nocloa*, and likewise with a stunted proboscis which, however, is a few millimeters long. The frontal projection is eordiform, without a central appendage, below extended into a point. All the rest as in *Nocloa*, but the prothorax exhibits a very feeble tuft. America.

- viridescens*. **O. viridescens** *Schs.* (45 i) is the largest species with ochreous yellowish-grey forewings tinted with greenish, in the basal and discal areas powdered with purple grey, and in the lower half of the discal area powdered with reddish-brown; transverse lines red-brown, bordered with whitish, the large maculae are in feebly lighter rings, between them the upper half of the cell is filled up with chocolate-brown. Hindwing light reddish-brown. Mexico.
- viridifera*. **O. viridifera** *Grt.* (45 i). The yellowish-white forewing, powdered with olive-green, is darker olive-green in the hindmarginal third of the median area and in a costal-marginal spot reaching down between the maculae; the transverse lines are darker green; of the undulate line only the beginnings at the costal margin and hind-margin are indicated by small darker spots. Hindwing feebly reddish-brown. Arizona.
- pura*. **O. pura** *B. & McD.* (45 i) shows yellowish-white forewings with very indistinct brown transverse lines which are finely dentate, the maculae are also finely surrounded with brown, the ring-macula is small, the reniform macula large, strangulated, between both a feeble brown costal-marginal shadow. Hindwing of a pure white. The marking may disappear more or less. Expanse of wings: 28 mm. Arizona.

O. rhodoxantha Dgn. (45 i) is a smaller species not quite corresponding with the diagnose of the genus, *rhodoxantha*, because, the anterior tarsi have a normal length. Forewing yellow, the basal half of the costal margin and the proximal border of the anterior transverse line are broadly powdered with red-brown, the marginal area being purple pink; transverse lines red-brown, the anterior line on the submedian fold very pointedly dentate, the posterior line double, its proximal part intensely purple pink; maculae absent. Hindwing yellow, on the veins and margin pink. Paraguay.

170. Genus: **Hemioslaria** B. u. Benj.

Separated from the preceding genus by the better developed though not very long proboscis; in the cordiform, edged frontal projection there is a vertical central listel which is connected with the lower end of the edge, below it a horny plate; the thorax is clad with scales and hairs, the prothorax and metathorax each exhibit a loose tuft, the anterior one being very small; anterior tarsi with very strong spines. Abdomen with a tuft on the first ring. But one species was reported hitherto.

H. pima B. & Benj. (46 c). Thorax white, abdomen orange-yellow. Forewing lustrous white, the *pima*, transverse lines only indicated by costal-marginal dots and below the submedian fold by fine, undulate black lines. Hindwing black with white fringes. Expanse of wings: 33 to 36 mm. Arizona.

171. Genus: **Thurberiphaga** Dyar.

Very closely allied to *Oslaria* from which it differs in the different frontal projection representing a truncated-conical appendage provided with a raised edge and with a feebly scarred place in the centre; the proboscis is fully developed, the short palpi are porrect. But one species the larva of which is known as „pink bollworm“ of wild cotton (*Thurberia*) and may do much harm in Texas and Arizona; the imago flies in August and September.

O. diffusa Barnes (= *catalina* Dyar) (46 c) is light yellow on the forewing, between the veins very *diffusa*, feebly scaled orange with a pink median band which is in the middle connected with a similar marginal band by a broad pink longitudinal patch being above distinctly defined and below faded; the marginal band is distally dentate; fringe pink. Hindwing yellowish, in the distal half strewn with pink. Expanse of wings: 35 mm. Arizona.

172. Genus: **Perania** B. u. Benj.

Proboscis moderately developed, palpi erect, projecting beyond the frons which exhibits a large conical projection ending above pointed and being below hollowed out; thorax scaled with very feeble small tufts, abdomen tufted on the first rings; anterior tibiae not armed. But one species externally recalling *Stibadium* (p. 293).

P. dissociata B. & McD. (46 c). The olive-brown forewing is much darker in the basal half than in *dissociata*, the distal half, the border being formed by a still darker nebulous stripe beginning from the centre of the costal margin, extending to the lower cell-angle, from here in a rectangular break to the centre of the hind-margin; the distal transverse line is indistinctly double. Hindwing smoky grey. Expanse of wings: 34 mm. Utah.

173. Genus: **Minofala** Sm.

Proboscis somewhat stunted and only moderately long, palpi short and slender, not reaching to the conical frontal projection which is above provided with a rough cavity with a raised edge; thorax scaled, tuftless, also the abdomen tuftless, tibiae not armed. But one species.

M. instans Sm. (46 c). Forewing dingy light yellow, strewn with brown and white, with double, *instans*, interrupted transverse lines filled with whitish, and with a blackish faded longitudinal stripe from the middle of the anterior transverse line to the margin above the centre; the small maculae are whitish, only the ring-macula is surrounded by black; the apex is parted by an oblique light patch, the undulate line has above some small black sagittary spots in front of it. Hindwing whitish, distally smoky with a dark central luna and post-median line. Expanse of wings: 26 mm. Texas.

174. Genus: **Bellura** Wkr.

We combine here, in accordance with BARNES and BENJAMIN, the former genera *Sphida* and *Arzama* being chiefly only distinguished by the presence or absence of a small roundish projection being besides hidden

in a hair-tuft: proboscis stunted. palpi porrect, below long-haired; male antennae long-combed. thorax purely clad with hair and exhibiting only behind a loose tuft; the tuftless abdomen is long-haired at the base. in the ♀ provided with a woolly anal tuft. Some rather large species. all from America, their larvae. as far as they are known. boring into species of *Typha*.

- obliqua*. **B. obliqua** Wkr. (= *obliquata* Grt.) (45 k) has light grey forewings strewn with brown, the discal area being darkened by reddish-brown; the very oblique anterior transverse line bends on the hindmarginal vein to the base, the posterior line is somewhat dentate, the obliquely placed reniform macula is somewhat more yellowish. Hindwing reddish brownish-grey. Canada to Florida and Colorado. — The larva is slender, black with a rough skin, and lives in *Typha latifolia*. — f. **pallida**. *B. & Benj.* (46 a) is considered to be the western race from Utah, but it may be a distinct species. It is a much lighter form, quite light yellowish-brown, the basal area whitish, the maculae centred with reddish, the median shadow quite absent, the hindwing slightly tinted with flesh-coloured reddish. — f. **brehmei** *B. & McD.*, in contrast with *pallida*, is a somewhat smaller, square-built form with a less produced apex of the wing and a much deeper brown colouring, the median area intensely darkened, the basal area not being whitish; the hindwing is also darker smoky-brown. Described from New Jersey and perhaps also a distinct species.
- densa*. **B. densa** Wkr. (= *oecogenes* Dyar) (46 a). Forewing reddish-brown, base of costal margin not lighter whitish but with a slight pink hue, the median area brownish, not contrasting, the elliptical reniform macula large, light reddish, centred with a redder colour, not so oblique as in *obliqua*, marginal area powdered with a darker grey. Anal wool in the ♀ white. Expanse of wings: 30 to 35 mm. Washington to Florida.
- gargantua*. **B. gargantua** Dyar (45 k) is a larger form with an expanse of 45 to 55 mm. Body grey with a dark brown mesothorax and black anal wool in the ♀; forewing in the basal area violettish-grey, not white, median area dark brown, the elliptical reniform macula is oblique, centred with reddish, the ring-macula is absent altogether, the distal transverse line is feeble, the marginal area is dark violettish-grey. California, bred from *Typha latifolia*.
- anoa*. **B. anoa** Dyar (45 k) is likewise a very similar species, the forewing dark reddish-brown, the markings obliterated by the irroration, the basal area only somewhat lighter, followed by a red shadow, the reniform macula centred with dark red. Hindwing brown, in the disk flesh-coloured reddish with a darker central spot. Expanse of wings: 50 mm. Florida.
- malanzasensis*. **B. matanzasensis** Dyar (45 k) is about the intermediary between *obliqua* and *anoa*, the shape of the wings being that of *anoa*, the markings those of *obliqua*, more reddish, the light basal area less contrasting, the median area broadly shaded with dark and with a distinct oblique median line as in *anoa*. Expanse of wings: 50 mm. An insular form from Cuba.
- pleostigma*. **B. pleostigma** Dyar (45 k) is the most similar to *gargantua*. Forewing reddish-brown shaded with chocolate-brown, basal area flesh-coloured reddish, the maculae centred with a dull red-brown, the reniform macula above pointed, the median vein and its branches powdered with dark; the marginal area is powdered with purple grey with small darker sagittary spots. Hindwing brown, at the margin broadly darker. Expanse of wings: 52 mm. Mexico (Tabasco).
- gortynoides*. **B. gortynoides** Wkr. (= *vulnifica* Grt.) (46 a). Forewing light red-brown, strewn with a darker colour, in the median and marginal areas more intensely so, between them greyer with brown transverse lines and maculae similar to the preceding species. Hindwing light reddish brown, strewn with a darker colour. The ♀ is more yellowish, the anal wool white. Canada to Florida.
- melanopyga*. **B. melanopyga** Grt. (46 a) is very similar, but the median and marginal areas are not more prominently dark, the areas between them not greyer. Hindwing lighter, the female anal wool is black. From Florida. — Larva olive-grey, beneath lighter; it lives in water-lilies.
- diffusa*. **B. diffusa** Grt. (46 b) is the darkest species, on the ochreous-yellow ground intensely strewn with dark red-brown, in the median area powdered with red-brown, the reniform macula narrow and oblique. Hindwing reddish greyish-brown, at the margin darker, anal wool in the ♀ dark brown mixed with grey. Canada, Maine.

175. Genus: **Archanara** Hbn.

Separated from the preceding genus by a long triangular horny frontal appendage being bicuspid at the end, the male antennae not being pectinate, but only feebly serrate and set with ciliary tufts, and the tuftless thorax exhibiting an admixture of hair-like scales; the abdomen also shows a tuft on the first ring. As to further particulars about this genus containing several palearctic species, the larvae of which live in reed, cf. Vol. III, p. 236.

- oblonga*. **A. oblonga** Grt. (= *permagna* Grt., *subcarnea* Kell.) (46 b). Forewing light ochreous-yellowish, with a red-brown tint and strewn with a brownish-grey, with a darker striped median, with dots instead of the maculae, and a row of vein-dots instead of the postmedian line. Hindwing ochreous-reddish, in the disc powdered with brown. From Maine and New York to Florida, as well as in Jamaica. — The slender brown larva lives in *Typha*.

A. subflava *Grt.* (46 b) is smaller than the preceding species, with a larger reniform macular dot *subflava*, at the lower cell-angle and more distinct rows of dots instead of the two transverse lines, an undulate line is indicated by the marginal area behind it being darkened, no marginal dots. Canada and United States as far as South Dakota, Illinois, Wisconsin.

A. alameda *Sm.* (46 b) is still somewhat smaller on an average, with dull red-brown forewings strewn *alameda*, with a darker brown, the veins striped blackish, quite obsolete maculae, and only a posterior row of vein-dots. Hindwing ochreous-brownish. The ♀ has a yellower tint with more distinct markings, particularly the postmedian dots are large and often bordered with white. California.

A. laeta *Morr.* (46 b) has bright red-brown forewings with brown striped veins without any row of *laeta* dots, only at the lower cell-angle there is a small darker spot. Hindwing reddish-ochreous, strewn with brown. New Jersey, New York.

176. Genus: **Cea** *Grt.*

Distinguished by the developed proboscis, plainly rounded frontal projection with a horny plate below it; on the thorax being clothed with hair and hair-like scales, there are loose tufts in front and behind. Abdomen tuftless. Three purely North American species.

C. immacula *Grt.* (46 c) is a uni-coloured yellowish-white insect most rarely exhibiting traces of *immacula*, faint marking. Hindwing white with a silky gloss. Arizona, New Mexico.

C. colorado *Sm.* (= *leucanidia* *Hmps.*) (46 c). This species having formerly been regarded as *Arsilonche colorado*, belongs to this place; forewing very light yellowish, with a feeble reddish tint, somewhat lighter veins and single darker internerval streaks in the marginal area. Hindwing yellowish white. Colorado, Oregon.

C. cirphidia *Hmps.* (46 d) differs from *colorado* in the somewhat darker total colouring with black *cirphidia*, irroration and some black dots in the cell-end. California.

177. Genus: **Calamia** *Hbn.*

This oldest name having been established in 1822 for the palearctic species *Rhizedra lutosa* and *phragmitidis* must be maintained instead of the name introduced by HAMPSON: *Arenostola*. Separated from the preceding genus by more erect palpi, a smooth frons only provided with a hair-tuft, and a tuftless metathorax. As to this genus cf. also Vol. III, p. 234.

C. inquinata *Gn.* (= *orientalis* *Grt.*) (46 d). Forewing ochreous-reddish, strewn with black, the veins *inquinata*, striped whitish, and a black longitudinal stripe in the upper half of the cell; a similar stripe is submedian in the discal area, and an indistinctly bent postmedian line reaches to it. Hindwing ochreous brownish. Canada to New York and Buffalo.

C. orphnina *Dyar* is uniformly and densely powdered with grey on the dingy yellowish ground, so that *orphnina*, the markings are almost covered; these markings consist of darker striped veins and a postmedian row of dots as well as a white dot at the lower cell-angle; along the costal margin and from the median vein towards the margin there are darker nebulous patches. Hindwing light grey. Expanse of wings: 27 to 32 mm. New Hampshire.

C. variana *Morr.* (46 d) is very similar to *inquinata* and merely differs in the absence of the posterior *variana*, transverse line. Michigan.

C. defecta *Grt.* (46 d) is a somewhat larger light reddish grey species shaded with red-brown in and *defecta*, below the cell as far as the margin below the apex, the veins in the marginal area on both sides bordered with light; the end of the median vein is white-striped, at the cell-end there is a black small luna below bordered with white, behind it a row of vein dots. Hindwing brownish. Eastern and Central States.

178. Genus: **Hypocoena** *Hmps.*

The genus contains but one slender species distinguished from the preceding genus by the thorax being coarsely haired without tufts.

H. rufostriga *Pack.* (= *punctivena* *Sm.*, *rufostrigata* *Hmps.*) (46 d). Forewing ochreous-reddish with *rufostriga*, whitish veins strewn with black, and a black faded longitudinal stripe from the centre of the median vein to the margin; instead of the postmedian line a double row of dots on the veins. Hindwing yellowish greyish-brown. From Labrador and Canada to Colorado.

179. Genus: **Microlita** *Hmps.*

This genus was erected for a single small insect from Brazil, which is very closely allied to the following genus *Amphilita* and differs from the latter in the conical frontal projection ending pointedly.

leucorhabda. **M. leucorhabda** Jones (46 d). Forewing yellow, scantily strewn with black, in the lower half of the cell as far as the apex with a broad white longitudinal stripe which is defined in the cell above by a black line being expanded into a small discal spot at the cell-end; below the apex the white colour is beneath defined by a brown patch. Hindwing brownish-white, at the margin darker. Castro (Paraná).

180. Genus: **Amphilita** *Hmps.*

Proboscis well developed, palpi obliquely erect with a short terminal joint; frons smooth, thorax sealed. tuftless, abdomen tuftless, too; tibiae slender with long spurs. Only 2 species.

arcuata. **A. arcuata** Jones (46 d). Forewing red-brown, strewn with blackish-brown, with darker striped veins and a white longitudinal stripe along the median as far as the apex and with traces of double transverse lines, the posterior line being more distinct below the white stripe. Hindwing white, at the margin red-brown. Brazil.

punctilinea. **A. punctilinea** Jones (46 d) has ochreous-yellow forewings strewn with dark, with faint transverse lines indicated by vein-dots. Hindwing yellowish-white, at the margin brownish. Brazil.

181. Genus: **Acylita** *Hmps.*

Distinguished from the preceding genus by the stunted proboscis, more slender palpi, thorax intermixed with hairs. On the hindwing the costal branch rises only shortly before the cell-end. — Neotropical.

cara. **A. cara** Schs. (46 e). Forewing pink with a red-brown longitudinal stripe through the cell to the apex which is above and below bordered with white, and with a feeble red stripe below it to the centre of the hind-margin. Hindwing brownish-white. Brazil.

elongata. **A. elongata** Schs. (46 e) is larger than *cara* with white forewings suffused with pink, in the proximal and marginal areas of a deeper pink strewn with brown; the brown longitudinal stripe of *cara* is only feebly traceable. Brazil.

sanguifusa. **A. sanguifusa** Jones (46 e) is smaller than *cara*, of a deeper pink, the longitudinal stripe and the hindmarginal area of a deep red, the distal-marginal area with red internerval stripes. Hindwing white, at the margin yellowish. Brazil.

dukinfieldi. **A. dukinfieldi** Schs. (46 e) has bright pink forewings with an ochreous-yellow costal margin, the median vein and its branches being white-striped. Hindwing very light brownish. Brazil.

disticta. **A. disticta** Jones (46 c) has yellowish-brown forewings strewn with black, with black dots instead of the maculae and 2 dots at the hind-margin instead of the posterior transverse line; the apex is parted by a brown patch, below it a similar undulate linear shadow extends. Hindwing yellowish. Brazil.

monosticta. **A. monosticta** Jones (46 e) is somewhat smaller than the preceding species and of a more reddish tint, with but one black discal dot and traces of a red faded apical patch, the undulate line being absent. Hindwing yellowish. Brazil.

182. Genus: **Neolita** *Hmps.*

Only 2 small species very similar to the preceding ones, but with very long and densely haired porrect palpi.

perstriata. **N. perstriata** *Hmps.* (46 e). Forewing yellowish-white, tinted red-brown and strewn with brown, with 3 black cellular dots and a faded red-brown oblique patch from the apex to the lower cell-angle; the transverse lines are indicated by black vein-dots. Hindwing yellowish-white. Brazil.

epicaste. **N. epicaste** Schs. Forewing yellowish-white, scantily strewn with brown, this irroration being intensified and forming 3 feeble, distally angular transverse lines the median one of which is confluent with the brown border of the white reniform macula; discally and above the anal angle there are 2 brown nebulous spots. Hindwing brownish-grey. Expanse of wings: 14 mm. French Guiana.

183. Genus: **Ablita** Dyar.

Likewise very closely allied to *Acylita*, but with somewhat longer palpi and a more smoothly scaled thorax without any admixture of hair and tufts; tibiae likewise sealed, not hairy as in *Acylita*, forewing narrower with a rectangular apex; the subcostal venation is somewhat different, since the 4 lower branches rise all on a common pedicle and the accessory cell is only very small.

A. adin Schs. (46 e). Forewing light reddish-yellow, strewn with a pinkish brown, particularly above *adin*, the submedian vein, in the cell, and at the distal margin; instead of the transverse lines there are single vein-dots, at the cross-vein a dark dot to which a feeble oblique costal shadow extends. Hindwing dark grey with a darker central dot. Costa Rica and Panama.

A. nymphica Dyar (46 e) has pinkish-yellowish forewings strewn with dark brown, with a small black *nymphica*, discal dot and the beginnings of the transverse line only at the costal margin. Hindwing whitish. Expanse of wings not stated. Panama.

A. grammalogica Dyar (46 e) is on the forewing straw-coloured, shaded with olive-brown, particularly *grammalo-* in the shape of stripes at the distal margin and apex, with a small white discal dot bordered with black, and 4 *gica*, fine brown transverse lines, the most distal (subterminal) one being broken up into moon-spots. Hindwing of a dingy light brownish colour. Expanse of wings: 17 mm. Panama.

 184. Genus: **Rhyncholita** Hmps.

Like *Neolita*, but with still much longer palpi being 3 times the length of the head, porrect, and above and below hairy; tibiae hairy, not scaled as in *Neolita*, forewing very narrow with a pointedly produced apex.

R. atripuncta Hmps. (46 e). Forewing yellowish grey, feebly tinted reddish and strewn darker, with vein- *atripuncta*, dots instead of the transverse lines and small black maculae. Hindwing light flesh-coloured with a small black discal dot and a row of vein-streaks behind it. Brazil. — ab. **nigroalba** Strd. (= ab. 1 Hmps.) shows the maculae *nigroalba*, centred whitish.

R. diaperas Hmps. is similar to *nigroalba*, the maculae being white and surrounded by blackish- *diaperas*, brown; the reniform macula contains yet black dots above and below; a yellowish-white patch extends from the apex to the reniform macula, it is above and below bordered with red-brown; the dark brown subterminal line is undulate. Hindwing yellowish-white with a bent postmedian line and central spot, at the margin brownish. Expanse of wings: 24 mm. Brazil: Castro (Paraná).

 185. Genus: **Tranoses** Schs.

Proboscis developed, palpi obliquely rising, densely scaled, the 2nd joint below hairy, the 3rd very short. Thorax scaled, tuftless like the abdomen. Forewing narrow with a roundish apex and an oblique distal margin. On the hindwing the upper median rises on a long fork with the lowest radial branch, and likewise the uppermost radial branch with the subcostal branch, the middle radial being relatively strong and coming out near the lower cell-angle.

T. hirtipuncta Schs. (46 f). Forewing yellowish-reddish white, scantily strewn with brown, the upper *hirtipuncta*, half of the cell, the space below the median as far as the submedian fold, and a subapical patch are white; above the median a brownish longitudinal stripe extends behind the cell obliquely upwards to the apex as in most of the species of *Amolita*; the maculae are indicated by brown dots. Hindwing white. Expanse of wings: 20 mm. Costa Rica.

T. perangulata Hmps. Forewing on the white ground strewn with reddish brown and scantily with *perangula-* a darker tint, costally and in the cell striped red-brown, with reddish-brown transverse lines, the anterior line *ta*, twice very much distally angled, the posterior line distally bordered with white, below the costal margin very acutely distally angled as far as near the margin, then very obliquely extending to the hind-margin; maculae indicated by dots; apex parted by a long reddish-brown wedge. Hindwing brownish-white. Expanse of wings: 24 mm. Peru.

T. punctilinea Hmps. has yellowish forewings powdered with reddish-brown, the transverse lines *punctilinea*, marked by scanty black dots, being connected at the posterior line by a brownish line extending similarly as in *perangulata*; at the cell-end two dots behind each other; a brownish undulate line proceeds from the apex and is contiguous with the acute angle of the postmedian line. Hindwing yellowish-white. Expanse of wings: 20 mm. Colombia.

186. Genus: **Lepteria** Schs.

Closely allied to *Rhyncholita*, but on the hindwing with the same neuration as in *Tranoses*; the forewing with a pointed apex lacks the accessory cell, the two lower subcostal branches proceed from the cell, the 3 upper ones rise on a joint fork. Palpi twice the length of the head, above hairy.

viridicosta. **L. viridicosta** Schs. (46 f). Forewing whitish, at the costal margin broadly light green, traversed by oblique darker olive-green shadows, in the cell strewn with reddish-brown, with round black maculae; transverse lines marked by dots, behind the distal one a white line growing broader towards the apex and being distally bordered with olive-green. Hindwing white with black discal and anal spots. Expanse of wings: 26 mm. Costa Rica.

sacraria. **L. sacraria** Hmps. has yellowish-white forewings tinted with flesh-coloured pink, scantily strewn with brown, with a faint brownish line behind the cell and a brown oblique line from the apex to the hind-margin close behind the middle. Hindwing yellowish-white with a black central dot. Peru. — HAMPSON describes besides as „ab. 1.“ a form with a black, white-strewn subterminal band terminating faded at the anal angle, with intense black submarginal dots, and single dots on the fringes; besides the palpi are laterally not black, which is the case in the type; it is presumably a distinct species.

parallela. **L. parallela** Dgn. Forewing light yellow, with 2 faded parallel blackish transverse lines, the proximal line rising at the costal margin close before the apex, extending straightly through the lower cell-angle to the hind-margin, the second proceeding from the distal margin close below the apex; at the margin there are small internerval dots. Hindwing white with a blackish diaphanous central dot. Expanse of wings: 21 mm. Ecuador.

187. Genus: **Amolita** Grt.

Structure almost exactly like *Acylita*, but on the hindwing the costal branch has its normal origin near the base, and the tibiae are clad with scales, not hairy. Quite a number of small, rather similar species, partly also from Northern America, have been described.

perstriata. **A. perstriata** Hmps. (46 f). Forewing yellowish-white, scantily strewn with black, with a feeble brownish longitudinal stripe in the cell and 2 black dots each instead of the maculae; a faded subterminal shadow terminates beneath in a black dot. Hindwing yellowish white. Bahamas.

fessa. **A. fessa** Grt. (46 f) is much larger, powdered more red-brown, the brown longitudinal stripe in the cell extends only to the apex, a similar stripe is situated a little below it and extends to the centre of the hind-margin, where it joins a feebler one extending to the base. Hindwing somewhat more brownish. United States, from New York to Texas and Florida.

sentalis. **A. sentalis** Kaye (46 f). Forewing light reddish-ochreous, scantily strewn with black, with one black dot each representing the ring-macula and reniform macula, and similar brown longitudinal stripes as in *fessa*. Hindwing yellowish-white. Panama to Brazil and Trinidad.

obliqua. **A. obliqua** Sm. (46 f) is not synonymous with *sentalis*, though it is very similar, but twice its size, and the proximal one of the two oblique bands is connected with a longitudinal band extending below the cell. Florida and Texas.

pepita. **A. pepita** Dyar (46 f), in size midway between the two preceding species, marked as *sentalis*; the proximal oblique band is broad and distinct, below the apex black, farther below red-brown, the longitudinal stripe of *obliqua* is absent; the black dot at the cross-vein is either double or confluent enlarged. Mexico to Panama.

solitaria. **A. solitaria** Dyar resembles *obliqua*, but it has less pointed forewings, and the proximal oblique line bends below the cell in a sharp angle towards the base and grows narrow and fine, not broad as in *obliqua*. Expanse of wings: 21 mm. British Guiana.

intensa. **A. intensa** Dyar is likewise very similar, but the wings are not strewn dark, but in the cellular areas there is longitudinal powdering; the proximal oblique line is broad, faded, powdered with red, the distal line is fine, sometimes obsolete. Expanse of wings: 23 to 26 mm. Brazil: Castro (Paraná).

paranoma. **A. paranoma** Dyar has light straw-coloured wings being in the ♂ feebly, in the ♀ very intensely strewn with dark; the oblique lines are fine, dusty, parallel; the median vein and its branches are striped brown, the small black cellular dots are distinct, the distal one usually double, hindwing feebly yellowish. Expanse of wings: 24 to 30 mm. Brazil: Castro (Paraná).

A. irrorata *Hmps.* (46 f). The reddish-ochreous forewing is densely strewn with black, with two faded blackish-brown oblique stripes from the apex to before and behind the centre of the hind-margin, the distal stripe being narrower; two black dots in the centre and at the end of the cell. Hindwing yellowish-white. Paraguay and Argentina. *irrorata.*

A. roseola *Sm.* (46 f). Forewing light ochreous-yellowish, at the costal margin tinted with pink, the two oblique stripes flesh-coloured reddish; a black dot in the centre of the cell and 2 at the cell-end. Hindwing yellowish-white. Florida and Texas. *roseola.*

A. fratercula *B. & McD.* (46 g). On the ochreous-yellowish ground powdered with grey, shaded with a smoky brown; with a light oblique patch from the apex along the cell to the base, behind the cell above shaded with smoky brown, median vein finely yellowish; occasionally fine dark dots in the cell-end are visible. Hindwing smoky brown. Arizona. *fratercula.*

A. delicata *B. & McD.* (46 g). Forewing light yellowish, in the basal half and along the costal margin powdered with grey and densely strewn with black except an oblique patch from the apex, and feebly yellowish veins; with or without discal dots; hindwing smoky grey, in the ♀ white, only at the margin smoky. Arizona. *delicata.*

A. nyctichroa *Hmps.* (46 f) has plainly ciliated antennae in the ♂; forewing yellowish-grey, powdered with dark brown, with a feebly darker faded stripe below the median vein and from its end obliquely to the apex which is above bordered with a lighter colour; in the cell-end and behind it there are black dots; a post-median row of vein-dots. Hindwings lustrous brown with whitish fringes. Uruguay. *nyctichroa.*

188. Genus: **Cilla** *Grt.*

Separated from the preceding genus by the straightly porrect 3rd palpal joint, and besides by the tibiae being somewhat hairy. Only one small species with somewhat broader wings than those of the preceding species.

C. distema *Grt.* (46 g). Forewing white, in the marginal area feebly tinted yellow with fine dark veins and black dots in the middle and at the end of the cell, as well as a feeble postmedian row of dots. Hindwing yellowish-white. Texas. — In ab. **depunctata** *Strd.* (= ab. 1 *Hmps.*) the postmedian row of dots is absent. *distema.* *depunctata.*

189. Genus: **Dantona** *Wkr.*

Likewise of a structure very similar to that of the preceding genera, but the 2nd palpal joint is longer, below scaled, the scales at the end produced to a point on which the short porrect terminal joint rests. The thorax is clad with scales, without tufts.

D. stillata *Gn.* (= *discrepta* *Wkr.*, *congressa* *Wkr.*, *basalis* *Wkr.*) (46 g). Forewing blackish-brown, powdered with lustrous grey and strewn with black, with a black basal ray and cellular dot, instead of the reniform macula a minute black luna, below with a white dot; the posterior transverse line consists of small black sagittary spots. Hindwing lighter or darker reddish-brown, in the ♀ quite blackish-brown. — A variable species, often the forewings are of a purer brown: ab. **punctifinis** *Wkr.* — In ab. **inferna** *Schs.* there is a black longitudinal streak in the cell from the ring-macula to the posterior transverse line, below it in the lower cell-end another short black streak. — In ab. **stillatella** *Strd.* (= ab. 2. *Hmps.*) this longitudinal streak being situate on the discal fold is not black, but white, the ♂ hindwing is darker brown. From Brazil to Paraguay and Argentina. *stillata.* *punctifinis.* *inferna.* *stillatella.*

D. corves *Dyar* has greyish-brown forewings powdered with a greyish black, with a double white reniform-macular spot bordered with black and connected with a black streak in the cell; an oblique postmedian line consists in the upper half of small black spots and is only below visible as a line, it rises shortly before the apex and extends to the distal third of the hindmargin; in the distal-marginal area the veins are somewhat darker striped. Hindwing dingy white, in the ♀ brownish-grey. Expanse of wings: 22 mm. Panama. *corves.*

190. Genus: **Senta** *Steph.*

This genus being denoted as *Nonagria* by HAMPSON has been dealt with in the palearctic part of Vol. III, p. 238; we merely recapitulate here that the proboscis is stunted, the frons smooth, the thorax is clad with hair and hair-scales and exhibits 2 loose tufts. Only one American species is known with a distinct sexual dimorphism.

S. enervata *Gn.* (= *fodiens* *Gn.*) (46 g). In the ♂ the forewing is red-brown, powdered with grey, with vein-dots instead of the transverse lines, and with a small black spot in the lower cell-angle. Hindwing reddish brown. The ♀ is lighter, with a brown longitudinal stripe on the median and darker veins of the marginal area; the transverse lines are more distinct, the posterior line as a double row of dots, in the reniform macula above and below black dots. Hindwing more whitish. Florida. *enervata.*

191. Genus: **Redingtonia** *B. u. McD.*

Proboscis developed, palpi short, erect, the last joint projecting forward, the frons exhibits a pointed horny appendage the lower end of which is prolonged into a trilobate plate, below it a horny plate. Thorax clad with rough hair intermixed with some scales without tufts. Only one species:

alba. **R. alba** *B. & McD.* (46 g) is a purely white species, only the frons and abdomen are yellowish. Forewing beneath smoky grey. Arizona.

192. Genus: **Harrisonia** *Schs.*

Structurally similar to the preceding genus, but with a smooth frons; the thorax is only clothed with hair, tuftless, only the first abdominal ring exhibits a small feeble tuft, laterally there are somewhat longer hair-tufts. Only one species.

williamsi. **H. williamsi** *Schs.* (46 g). Forewing brownish-grey with black, somewhat dentate transverse lines proceeding from somewhat thicker costal-marginal spots, the ring-macula is a black dot, the reniform macula is large, round, black, distally slightly concave; subterminally a greyish-brown shadow, behind it the margin is grey, at the apex whitish. Hindwing drab with a round discal spot and a postmedian line. Expanse of wings: 39 mm. Galapagos Is.

193. Genus: **Aleptinoides** *B. u. McD.*

Proboscis developed, the 2nd palpal joint erect, the last joint horizontal; the frons exhibits a strong shovel-shaped appendage with a horny plate below it. The thorax is clothed with scales, tuftless, the tibiae are unarmed. Only one small species externally similar to the genus *Antapлага*.

ochrea. **A. ochrea** *B. & McD.* (46 h). Forewing reddish light yellow; powdered with light brown, at the base and along the costal margin shaded with red-brown; the small maculae are feebly marked with brown; only the posterior brown transverse line is present, distally bordered with light, behind it the subterminal area is powdered with brown, separated from the brown marginal area by the narrow yellowish undulate line. Hindwing dark greyish-brown. New Mexico.

194. Genus: **Xylostola** *Hmps.*

Of this chiefly Indian and African genus also 1 representative has been found in America. Proboscis developed, palpi erect with a long terminal joint; frons with a small round projection which is covered by a hair-tuft. Thorax clad with hair intermixed with hair-like scales, without tufts like the abdomen. Cf. Vol. XI, p. 191.

novi-mundi. **X. novi-mundi** *Dyar* has pinkish-brown forewings with quite indistinct transverse lines marked by single blackish scales, the posterior line being dentate, distally bordered with a somewhat lighter colour; the ring-macula is a small blackish spot, the reniform macula is large, light reddish, without any bordering, proximally with a blackish spot; before the obsolete undulate line small blackish spots. Hindwing blackish with lighter speckled fringes. Expanse of wings: 27 mm. Ecuador (Portovelo).

195. Genus: **Ommatostola** *Hmps.*

Proboscis developed, palpi obliquely erect, with a long-haired middle joint and a short terminal joint; frons smooth, thorax only clothed with hair and, like the smoothly scaled abdomen, tuftless. But one species;

lintneri. **O. lintneri** *Grt.* (46 h). Forewing light reddish-yellow with a white costal margin, and white-striped and black-strewn veins, at the cell-end a white streak on both sides scaled black, the transverse lines marked by rows of vein-dots. Hindwing white with yellowish veins. New York, New Jersey.

196. Genus: **Luceria** *Hein.*

For this genus HAMPSON introduced the name *Calamia*, which, however, we have already used for an older genus. It differs from the preceding genus in the shorter palpi, longer haired tibiae with stronger tarsal spines; the abdomen is not scaled, but hairy, laterally more intensely haired. But one species:

L. tranquilla Grt. (= *sambuei* Behr) (46 h) has yellowish-white forewings powdered with red-brown, *tranquilla*, with red-brown transverse lines and median shadow, in the latter the olive-green reniform macula. Hindwing *viridula*, reddish-brown. — ab. **viridula** Grt. exhibits instead of the red-brown colouring of the body a yellowish-green colour. Canada to California. — The larva is above olive-grey with a yellow dorsal stripe divided into spots, white black-edged subdorsal lines, above a broad yellow lateral stripe narrowly black, above it bluish-grey. It is stout, tapering towards both the ends; it lives on *Sambucus*; it pupates in a thick silky web.

197. Genus: **Narthecophora** Sm.

This genus has a stunted proboscis and very short palpi, on the frons a large tricuspidate horny projection, the central dent being very long, above with a keel; below the whole there is a horny transverse plate. The thorax is clad with scales intermixed with hair, without tufts. Anterior tibiae with a short claw.

N. pulverea Sm. (46 h) is an insignificant grey insect with somewhat darker transverse stripes and *pulverea*, a whitish reniform macula. Hindwing whitish. From Arizona.

198. Genus: **Chasmina** Wkr.

This genus is otherwise purely Indian (cf. Vol. XI, p. 193) and very closely allied to *Ommatostola* from which it only differs in a basal tuft on the first abdominal ring and the sealed thorax. One species was described from Central America; we are able to add a Mexican species.

C. alcidamea Drc. (46 h) is purely white, only the abdomen somewhat yellowish, palpi and antennae *alcidamea*, brownish and the anterior femora above blackish-brown. Mexico and Guatemala.

C. mexicana spec. nov. (46 h) differs from *alcidamea* in its much larger size, ochreous-brown frons, *mexicana*, palpi and costal margin, and very fine black marginal dots, the largest of which is below the apex; abdomen purely white. Mexico (Colima) in July. Type in the Coll. DRAUDT.

199. Genus: **Oxythres** Drc.

Distinguished from the preceding genus by the hairy, tuftless abdomen not being sealed, and a small roundish projection on the frons; abdomen tuftless, shape of the wings long and narrow.

O. splendens Drc. (46 i). This peculiar insect with its long narrow pinkish-white forewings on which *splendens*, the chestnut-brown powdering is divided into many minute spots by the light veins and numerous undulate transverse lines, with a larger dark triangular spot at the costal margin near the apex is quite unmistakable. Colombia and Peru.

200. Genus: **Dipinacia** Hmps.

Characterized by the developed proboscis, erect palpi with a porrect terminal joint, a bilobate horny plate in the centre of the frons with a bent plate below it; the thorax is clad with scales and hair and exhibits behind a small loose tuft; the abdomen is tuftless. Only 2 species from Southern America are known:

D. schiniodes Dogn. (= *zothecaea* Dyar) (46 i). Forewing yellowish-white, powdered with olive, *schiniodes*, particularly in the marginal area, in the basal half of the hind-margin feebly tinted with reddish-brown, with 2 whitish postmedian transverse lines, the proximal one of which is proximad bordered with red-brown. Hindwing light brownish with 2 darker postmedian bands. Argentina.

D. athetica Dogn. Forewing light yellowish-brown, the only marking are two postcellular lines formed *athetica*, by black scales, obliquely extending distally and being roundedly united above the middle radial branch, whereby the approximate figure of a very large reniform macula is produced. Hindwing of a diaphanous purely white colour, at the margin brownish. Expanse of wings: 27 mm. Argentina.

201. Genus: **Azenia** Grt.

Separated from *Narthecophora* by a different frontal appendage consisting of a rounded projection with a tricuspidate horny plate in the centre and a horny plate below it, the tibial claw being absent besides. The genus is also known from Australia and Africa.

implora. **A. implora** Grt. (46 i). Forewing light yellow, in the basal and costal-marginal areas tinted reddish with transverse lines broken up into single dots and a feeble faded median line. Hindwing white. New Mexico, Arizona.

edentata. **A. edentata** Grt. (46 i) has broader wings of a deeper yellow with but one small purple brown spot behind the centre of the costal margin. Hindwing light brownish-yellow, at the margin deeper yellow. New Mexico, Arizona.

aprepia. **A. aprepia** Dogn. shows uni-coloured greyish-brown forewings without any marking except a fine brown marginal line being interrupted by the veins. Hindwing white, at the costal and distal margins a little strewn with brown. Expanse of wings: 29 mm. Argentina.

202. Genus: **Antaplaga** Grt.

Proboscis developed, the short porrect palpi are below somewhat hairy, the frons with a truncated conical horny projection with a raised margin and a central point, and a horny plate below it; the thorax is rather smoothly scaled and tuftless like the abdomen; the smoothly scaled anterior tibiae exhibit inside at the end a long bent claw; the structure is rather slender, with long and narrow forewings. Quite a number of species have been described from Northern and Central America, which, however, are apparently not all quite homogeneous.

pyralina. **A. pyralina** Schs. (46 i) is one of the most beautiful species, forewing silvery green, strewn with blackish-brown, with dentate brown transverse lines bordered with silvery white, and white maculae, the silvery white undulate line being more or less divided into spots; hindwing brown with white-speckled fringes. Mexico.

dela. **A. dela** Drc. (46 i) has orange forewings with double dentate black transverse lines, the maculae surrounded with black, the cell between them more or less blackened, the fringes speckled black. Hindwing blackish-brown with whitish, feebly speckled fringes. — f. **stigmatica** Dyar (46 i) is a form with conspicuous silvery whitish maculae, the ground-colour is somewhat more golden yellow, the double transverse lines more or less filled with blackish. This form is described from Mexico City. — f. **hemicrocea** Dyar (46 i) is marked exactly like the preceding ones, but all the black markings on the orange-yellow ground are of a somewhat deeper orange, nor are the fringes speckled black. It flies at the same place and time as the preceding form.

atrolinea. **A. atrolinea** B. & McD. (46 k) belongs yet to the preceding forms being distinguished from the type (*dimidiata*) by a somewhat different frontal appendage, a transverse crescentiform projection with a vertical median listle and a horny plate below it. The colour and marking are similar, though the transverse lines are not so sharply angular, interrupted and not filled with blackish, the black cellular powdering being absent between the maculae which are not lighter than the ground-colour. Described from Arizona and probably only a northern race of *dela*.

dimidiata. **A. dimidiata** Grt. (46 k) has more elongate forewings with a more oblique distal margin, in the basal third white, behind it obliquely cut off coppery brown with a faded whitish subterminal band. Hindwing light brown with whitish fringes. Colorado.

hachita. **A. hachita** Barnes (46 k) is on the forewing of a bright chrome-yellow with a white median band which is edged by the black transverse lines; minute black internerval spots are subterminal. Hindwing yellowish-white, at the margin somewhat darker. Arizona.

sexseriata. **A. sexseriata** Grt. (46 k). Forewing all white, otherwise similarly marked as *hachita* with 2 intense black transverse lines; the subterminal row of spots is very distinct. Hindwing blackish-brown with yellowish-white fringes. Arizona.

biundulalis. **A. biundulalis** Zell. (46 k) exhibits on the yellowish-white forewing 2 strong black transverse lines, the subterminal row of spots of the preceding species being absent altogether. Hindwing likewise yellowish-white. Texas.

thoracica. **A. thoracica** Edw. (46 k) initiates a group of quite uni-coloured unmarked species which are partly very difficult to separate. *thoracica* has an orange-yellow head and thorax, a brownish abdomen, and silvery-white forewings and hindwings, with an ochreous-yellow hue. Arizona.

suffumosa. **A. suffumosa** Dyar (46 k) is larger than the preceding species, and on the forewing powdered with yellowish olive-brown; head and thorax are likewise orange, the hindwing is tinted brownish-grey. From Mexico City. — From Zacualpan there is a very similar, but throughout paler and smaller form which I denominate f. **anaemica** f. n. (46 k); here the forewing is lustrous silvery ochreous whitish, hardly powdered with olive, with almost white hindwings, though in the ♀ darker brownish-grey than in *suffumosa*; head and thorax in the ♀ like the ♂ forewing somewhat more orange-yellow.

salacon. **A. salacon** Drc. (47 a) is uni-coloured deep orange on the forewing and anterior body, the hindwing being lighter orange-yellowish, in the ♀ feebly powdered with brownish-grey in the disc. Mexico (Guerrero, Zacualpan).

A. spreta *sp. n.* (47 a) differs from the preceding species in much lighter orange-yellow forewings *spreti*. with a slight brownish tint. Hindwing loam-coloured grey, the anterior body somewhat deeper orange than the forewing. Mexico, numbers of them in both sexes from Zacualpan without transitions to *salacon*.

A. composita *Edw.* (47 a) is much smaller than *salacon*, on the forewing very lustrous orange as well *composita*. as on the head and thorax, fringes lighter. Hindwing lighter orange-yellowish with light fringes and a brownish-grey hue on the disc. Arizona.

A. dulcita *Schs.* (47 a). Head and thorax orange-yellow, forewing somewhat lighter yellow, the extreme *dulcita*. costal margin in the basal half greyish-brown. Hindwing whitish, feebly tinted brownish-grey, at the distal margin and in the ♀ darker. Mexico.

A. varrara *Dyar* (47 a) is extraordinarily similar to *dulcita*, but the forewing is paler yellow with *varrara*. a decidedly greenish tint, a very faint brownish-grey reflection, thorax coloured like the forewing. Hindwing darker brownish-grey also in the ♂. Mexico (Tehuacan).

A. pyronaea *Drc.* (47 a) is above on the head, thorax, and forewing of a pure white, on the hindwing *pyronaea*. blackish-brown with white fringes, just as dark is the under surface. Mexico (Guerrero).

A. alesaea *Dyar* (47 a) is the same, but also the hindwing is above dingy white, at the distal margin *alesaea*. at most with a slight greyish-brown tint. Beneath only the forewing is blackish-brown. Mexico (Guerrero).

A. melanocrypta *Dyar* (46 l) is considerably larger than the two preceding species, easily discernible *melano-* from *pyronaea* by 3 antemedian and 2 postmedian black dots. Hindwing and abdomen purely greyish-black. *crypta*. Under surface quite black. Mexico (Tehuacan).

A. plesioglaucia *Dyar* (= *comstocki* *Hill.*) (47 a) is on the head and wings dark bronze-coloured, in *plesioglauc-* the basal three fourths with a very intense blue and violet metallic gloss with 3 broad brown stripes. Hindwing *ca*. blackish-brown. Described from Mexico (Guerrero), recently reported from Arizona.

A. prepontendyta *Dyar* (47 b) externally resembles *H. arivaca* by the white forewing with the narrow *preponten-* orange discal area which is edged by black transverse lines and in which the small white, black-edged maculae *dyta*. are, the reniform macula with a black central streak; marginal area orange with black veins and internerval stripes. Hindwing brownish-grey, at the margin feebly hued with orange. The species, owing to a somewhat differently shaped frontal appendage, strictly speaking does not belong to this genus. Mexico (Guerrero).

A. hilli *B. & Benj.* (= *calliente* *Hill.*) (47 b) neither belongs here for certain, because the frontal *hilli*. appendage is like in *Stiria*, the habitus similar to *St. hutsoni* and *olivalis*. Forewing light olive, strewn with white, with 3 extinct white transverse bands, the distal band continued in an oblique apical patch, the most proximal band extending almost vertically to the hind-margin, the two distal ones more oblique. Hindwing whitish, towards the margin powdered with olive-brownish. Expanse of wings: 26 to 28 mm. California.

203. Genus: **Homolagoa** *B. & McD.*

According to DYAR'S suggestion, we place this genus here owing to the close affinity to the last white species of the preceding genus, as it is better ranged here than with the *Erastrinae*. Proboscis developed, but feeble, palpi erect with a rather long terminal joint, frons with a conical projection and a horny plate below it. Thorax clothed with scales and hair, tuftless, tibiae unarmed. Abdomen of ♀ with a tuft of anal wool. On the hindwing the lower radial branch is a little stronger developed than usual and rises above the lower cell-angle. Only 2 species:

H. grotelliformis *B. & McD.* (47 b) is white with black palpi, the abdomen with fine black rings, *grotellifor-* both the transverse lines marked by single black dots, the anterior line by 3, the posterior line by 5 dots; fringes *mis*. white with small black dots. Hindwing smoky grey with white fringes. Arizona.

H. tritogramma *Dyar* (47 b) is extraordinarily similar to the preceding species and presumably *tritogram-* only a local race of it. It is somewhat larger, the abdomen with somewhat broader black bands, and the *ma*. hindwing almost purely white. Mexico (Guerrero).

204. Genus: **Tristyla** *Sm.*

Distinguished by an uncommonly strong development of the frontal appendage which is extended into a long point, laterally and below surrounded by 3 short points, beneath the whole with a horny plate. Palpi long, straightly porrect; thorax scaled, behind with a large loose tuft, abdomen tuftless. Only 1 species:

alboplagiata. **T. alboplagiata** Sm. (47 b). The white forewing is powdered with greyish-brown and in the median area mixed with red-brown, the dentate black transverse lines bordered with white, the maculae are white, the reniform macula is a very large spot extending to the costal margin. Hindwing light brown. California, Arizona.

205. Genus: **Triocnemis** Grt.

Like the preceding genus, but the palpi are shorter and erect, the frons with a plain rounded projection and a horny plate below it; the anterior tibiae are very short, at the ends widened and excised with a large and a small spine on the inside.

saporis. **T. saporis** Grt. (47 b). Forewing white, in the median area greyish-brown, strewn with white, edged by black transverse lines with metallic lustrous scales, therein with white-ringed maculae surrounded by black, behind it at the costal margin with a black triangular spot and a brownish-grey subterminal band. Hindwing white, feebly powdered with brownish. Washington, Colorado, California, Arizona.

206. Genus: **Pseudinodes** Hmps.

Characterized by a stunted proboscis, very short porrect palpi, and a large globular frontal protuberance which is above extended into a trilobate plate with a horny plate below it. Thorax smoothly scaled and tuftless like the abdomen.

producta. **P. producta** Hamps. (47 b). Head and thorax white mixed with olive-green; forewing white, in the median area and in the costal half behind it red-brown intermixed with large bluish-white scales, therein with maculae that are surrounded with black; in the grey marginal area an undulate white subterminal line. Hindwing white. Argentina.

207. Genus: **Pseudina** Guen.

Proboscis developed, the slender palpi erect with a short terminal joint, frons smooth without a projection; thorax clothed with hair and scales, behind with a large loose tuft, abdomen tuftless. A few pretty South-American species were described.

fatuella. **P. fatuella** Dogn. (47 b). Forewing silvery white with a large olive-brown costal-marginal spot behind the centre, therein the white-marked reniform macula with a jet-black spot distally; the posterior transverse line is proximally broadly shaded with red-brown, downwards appearing as an olive-brown band; subterminal grey internodal spots. Hindwing white. Ecuador.

vellerea. **P. vellerea** Guen. (47 c) is somewhat similar, but the brown costal-marginal spot extends farther towards the base and also comprises the ring-macula; behind it follows a broad bluish-grey postmedian band obliquely extending from the costal margin distally behind a double distal transverse line. Hindwing white, at the margin brownish. Brazil.

cyanostigma. **P. cyanostigma** Dogn. (47 c) is smaller than *vellerea*, similarly marked, with a silvery blue spot between the maculae in the cell, above it at the costal margin a blackish-brown spot, both the transverse lines double, grey, the bluish-grey postmedian band is absent; the undulate line is grey, behind it in the marginal area some small coppery brown spots. Hindwing diaphanous white with a black marginal line. Argentina.

albina. **P. albina** Hmps. (47 c) is likewise somewhat similar, of a purer white, the transverse lines plain and particularly the posterior line incomplete, the blackish-brown spot more confined to the costal-marginal portion and strewn with bluish-grey scales; the most distinctly recognisable by the brown marginal band which is proximally bordered by a black undulate line. Hindwing transparent white with a narrow brown marginal band which is broader and more spotted in the ♀. Brazil to Paraguay.

208. Genus: **Opsyra** Hmps.

To this genus so far containing only one Chinese species another small species from British Guiana is doubtfully reckoned. Proboscis developed, palpi obliquely erect with a short porrect last joint; frons smooth, thorax scaled with tufts of long spatulate scales on the prothorax and metathorax, and a large tuft on the first abdominal ring.

niphetodes. **O. niphetodes** Dyar (47 c). Forewing blackish-grey, powdered with olive, with a broad white black-edged band in the basal third, small white maculae, the reniform macula connected by a small white or olive spot with the costal margin, and with a single black postmedian line; undulate line spotted white. Hindwing black with white-speckled fringes. Expanse of wings: 23 mm. French and British Guiana.

209. Genus: **Microhelia** *Hmps.*

Proboscis developed, palpi straightly porrect, below long-haired; the frons exhibits a ring-wall-shaped appendage with a smaller coniform projection in the centre and a horny plate under it. Eyes small and reniform; thorax roughly haired and without scales like the abdomen, also the tibiae long-haired. Several small North-American species flying in the sunshine.

M. angelica *Sm.* (47 c) is a small blackish-brown insect with a coppery lustre with 2 coherent small *angelica*. yellowish-white spots behind the cell and below it. Hindwing the same. California.

M. restrictalis *Sm.* (47 e) is somewhat larger, and the postmedian spots are flown together into a *restrictalis*. yellowish-white band extending to the hind-margin. On the hindwing the band is narrower or may also be quite absent: — ab. **immacula** *Strd.* (= ab. 1. *Hmps.*). California. *immacula*.

210. Genus: **Heliothodes** *Hmps.*

Of a structure very similar to the preceding genus, but the frontal projection is a plain ring-wall without a central cone; the genus likewise only contains 2 small heliophile species:

H. diminutiva *Grt.* (47 c). Forewing purple red, with black and grey hair, with an indistinct greyish- *diminutiva*. white median band, with 2 white spots therein, and an indistinct grey subterminal line; hindwing blackish-brown with a coppery lustre, with a white round spot behind the cell-end and a dot behind it. — A species very variable in the development of the white spots: — in ab. **suffusana** *Strd.* (= ab. 2. *Hmps.*) the forewing *suffusana*. is black powdered with ochreous grey and without any purple red tint. — ab. **macromacula** *Strd.* (= ab. 1. *Hmps.*) *macromacula*. has much larger white spots which are often confluent particularly on the hindwing. — ab. **bifida** *Strd.* (ab. *bifida*. 3. *Hmps.*) in the ground-colour resembles ab. *suffusana*, but the spot below the cell-end is bipartite. From Oregon and Colorado to California.

H. fasciata *Edw.* (47 e) is very similar to the preceding species, but the anterior body and the forewing *fasciata*. are yellowish-white, powdered with a reddish brown, the spots forming a narrow oblique band which is connected in the cell with whitish spots before and behind the unmarked reniform macula. Hindwing blackish-brown with a grey tint and spots as in the preceding species. California.

211. Genus: **Eutricopis** *Morr.*

Separated from the two preceding genera merely by the smooth frons. Only one small variable species:

E. nexilis *Morr.* (47 e) has black forewings powdered with grey, with a purple red tint before and *nexilis*. behind the median area and at the distal margin, and with a white Y-shaped median band. Hindwing black powdered with grey, and with white confluent median spots. — In the form: **elaborata** *Edw.* the proximal side of *elaborata*. the Y before the reniform macula is absent. In the typical specimens from the north-west the hindwing beneath exhibits at the base and costal margin white powdering which is absent in Californian specimens: = f. **sub-** *subcolorata*. **colorata** *B. & McD.* in which the costal half is purple pink. The range of the species otherwise extends from Canada through Washington to Colorado and California.

212. Genus: **Baptarma** *Sm.*

Proboscis developed, palpi obliquely erect, the last joint somewhat drooping; the frons exhibits within the ring-wall a coniform appendage. Eyes large, oval. Thorax clad with hair and scales, tuftless, abdomen with a tuft on the first ring. Anterior tibiae at the end without a claw. Only one species has been described:

B. felicitata *Sm.* (47 a). Forewing brown with 2 yellowish-white spots behind and below the cell-end, *felicitata*. the latter spot larger and rectangular. Hindwing black with an extensive red disc. Beneath almost quite crimson with blackish margins. Utah.

213. Genus: **Palada** *Sm.*

Structure similar as in the preceding genus, thorax almost without any admixture of scales, frons plainly rounded. Anterior tibiae at the end with 2 horny spikes, the inner one being longer. Abdomen tuftless. Only one small species has been described:

scarletina.

P. scarletina *Sm.* (47 d) has light brownish forewings powdered with red particularly at the margins, with very faintly marked lighter transverse lines which are submedianly connected by a streak, without maculae; behind the undulate line the margin is yellowish-white, the fringes purely scarlet. Hindwing black. Expanse of wings: 12 mm. Utah.

214. Genus: **Xanthothrix** *Edw.*

Distinguished from the allied *Heliothodes* by the different frontal projection consisting of a projection surrounded by a ring-wall with a central cone which is excavated in front; besides the anterior tibiae exhibit inside at the end a bent claw. Here the small reniform eyes are likewise connected with heliophily. To the two older North-American species another Mexican representative has been recently added.

neumoegeni.

X. neumogeni *Edw.* (47 d) is orange-yellow on the forewing with orange-red veins and folds, similar transverse lines, and median and subterminal bands. Hindwing deep orange-red with a blackish marginal band. California.

stagnatogon.

X. stagnatogon *Dyar* (47 d) has a somewhat different frontal appendage, the central projection being developed as a vertical plate with a slight thickening at the lower end. Forewing dark orange with blackish-brown longitudinal stripes through the cell and above and below the lower median branch, a round white spot below the cell-end and a black undulate line behind which there are large yellowish spots at the apex and anal angle. Hindwing black. Mexico (Guerrero).

ranunculi.

X. ranunculi *Edw.* (47 d) has plain olive yellow forewings scantily strewn with a darker colour, the hindwing being more intensely powdered with blackish-brown. The ♀ is darker on the whole. California. —

albipuncta.

The form **albipuncta** *B. & Benj.* from California has near the cell-end a round white spot.

215. Genus: **Axenus** *Grt.*

Structurally likewise very similar to the preceding genera; only the frontal appendage is different: a truncate projection with a ring-wall, the lower end produced like a shovel, with a horny plate below it. But one small variable species:

arvalis.

A. arvalis *Grt.* (47 d) is on the forewing dark olive-brown, powdered with grey, with dark brown fine transverse and median lines, in the anterior half of the median area grey and with a faded whitish undulate line. Hindwing likewise olive-brown, powdered with grey, with faded lines in the centre and behind it. — In

ochraceus.

the form **ochraceus** *Edw.* the head and thorax is reddish-yellow, the forewing shows a coppery red tint. — In

ampla.

the form **ampla** *Edw.* the lighter grey markings are extinct, excepting the undulate line. Oregon, Colorado, California.

216. Genus: **Annaphila** *Grt.*

Separated from the preceding ones by the plain rounded frontal projection with a horny plate under it. All the rest is more or less similar. Quite a number of these heliophile small insects have been described from North America.

arvalis.

A. arvalis *Edw.* (= *salicis* *Edw.*) (47 d). Forewing blackish-brown, strewn with purple grey with black transverse lines, the anterior line proximally bordered with white, behind the distal line a broad purple grey postmedian band; undulate line indistinctly grey. Hindwing orange, without a discal spot, at the base and hind-margin blackish-brown, with a narrow black marginal band. Oregon, California.

danistica.

A. danistica *Grt.* (47 d) like all the following species exhibits a black discal spot on the hindwing; forewing dark brown, strewn with grey, with indistinctly double transverse lines filled with grey, and small grey maculae surrounded with brown. On the orange hindwing a dark postmedian line extends between the very narrow black margin and the discal spot. In the ♀ the markings are more distinctly grey. Oregon, California.

mera.

A. mera *Harv.* (47 d) is similar to *danistica*, with a slight olive tint, single transverse lines, on the averted sides bordered with whitish, connected by the coniform macula. On the hindwing the marginal band is somewhat broader, the postmedian line is absent. California.

domina.

A. domina *Edw.* (47 e) is very much like *mera*, chiefly distinguished by a black spot between the maculae, the ring-macula being open above; the reniform macula is only on the inside bordered by a white streak; the ground-colour is a purer black strewn with grey, less brown. California.

A. pustulata *Edw.* (47 e) differs from *domina* in the somewhat more reddish-brown colouring and only *pustulata*. white transverse lines not being marked with black; between the maculae which are surrounded with white there is a quadrangular black spot in the cell. The hindwing is more orange-yellow, the discal spot is very large. Arizona.

A. divinula *Grt.* (47 e) is a small red-brown species with a darker brown proximal area, strewn with *divinula*. grey, easily discernible by the broad white postmedian area being confluent with the white reniform macula. California.

A. astrologa *B. & McD.* (47 e) is very closely allied to *divinula*, but larger and easily distinguished *astrologa*. by the absence of the discal spot on the hindwing which shows a broader marginal band; the anterior transverse line is distinctly double, filled with white. Arizona.

A. germana *Edw.* (47 e) is brown on the forewing, powdered with grey, with greenish-black transverse *germana*. lines, the posterior line being indistinctly double, distally to it powdered with white, the whitish undulate line proximally bordered with black; the orange hindwing exhibits beside the black marginal band and discal spot an undulate black antemedian transverse line, the fringes being speckled black and white. California.

A. decia *Grt.* (= *amicula* *Edw.*) (47 e) is very similar, on the forewing more reddish, the maculae *decia*. more distinctly surrounded with white, between them a strong black median line, the posterior transverse line being hardly marked with black, behind it the extensive white powdering is absent. On the hindwing the black antemedian band is much broader. Oregon, California.

A. depicta *Grt.* (47 e) is somewhat larger than the preceding ones, strewn with a more purple grey *depicta*. colour, in the disc with a reddish tint, only the small reniform macula marked with grey is present; the grey undulate line is proximally shaded with brown. The antemedian band and marginal band are much narrower than in *decia*. California.

A. lithosina *Edw.* (= *variegata* *Sm.*) (47 e) by the broad yellowish-white postmedian area resembles *lithosina*. somewhat *divinula*, but it is much larger, and on the hindwing it lacks the discal spot, though it has an antemedian transverse line. The forewing is more suffused with a coppery brown, in the median area on the veins scaled with silvery blue; the black transverse lines are double, filled with whitish, the very large white reniform macula is confluent with the costal margin. Oregon, California.

A. miona *Sm.* (47 e) is very similar to *lithosina* and best distinguished by the much more uniformly *miona*. extending marginal band. Forewing purple brown, strewn with black and metallic blue; the reniform macula is yellowish-white, centred with red-brown, the postmedian area more yellowish-white, the undulate line bluish-white, at the anal angle spotted yellowish-white. California.

A. diva *Grt.* (47 f) is the most easily distinguished from the similar species by the yellowish-white *diva*. hindwing with a narrow blackish-brown marginal band; forewing dark brown, mixed with grey; the white postmedian oblique band is narrow. — ab. **yosemitensis** *Strd.* (= ab. 1 *Hmps.*) shows on the hindwing a broader *yosemitensis*. marginal band, and the forewing beneath is more extensively marked with black; from the Yosemite Valley. The typical form flies in the other parts of California.

A. casta *Edw.* (47 f) is the most easily discernible by the entirely white hindwing with a black marginal *casta*. band without the discal spot. Forewing blackish-brown mixed with grey, and marked very much like *diva*, the postmedian band being very broad and purely white. California.

A. superba *Edw.* (47 f) is likewise similar to *diva*, but smaller, the carmine hindwing is all around *superba*. broadly bordered with black, with a small brown discal spot; on the forewing the white postmedian area is narrow. California.

217. Genus: **Pseudacontia** *Sm.*

Chiefly separated from the preceding genus by the smoothly scaled, not hairy thorax with a loose tuft on the metathorax, as well as by the smooth frons only exhibiting a horny plate below; the short anterior tibiae are inside armed with a long spine and outside with a short one. The eyes are large and round and not small, elliptical.

P. louisa *Sm.* (47 f). Forewing yellowish-white, strewn with brown and black. Basal area blackish, *louisa*. median area brown, before the latter a broad yellowish-white band, with black maculae, a large ring-macula surrounded with yellow. Hindwing blackish with a broad yellowish-white median band with a large black discal luna in it. Louisiana.

P. crustaria *Morr.* (47 f) has red-brown forewings strewn with white and black, in the discal area and *crustaria*. behind it powdered with bluish-white, with broad white antemedian and postmedian bands; the black maculae are surrounded with white and very small. Hindwing blackish-brown with a faded median line which is distally bordered with white. Nebraska, Colorado.

- cansa.* **P. cansa** Sm. (47 f). Forewing lustrous grey with white antemedian and postmedian bands and very small black maculae; behind the whitish undulate line which is proximally scaled brown there is at the apex a golden brown spot. Hindwing brownish-grey with a faded whitish median band. Kansas.
- groteana.* **P. groteana** Dyar (47 f) has quite black hindwings; the forewing is greyish-black, in the median area darker with distinct grey transverse lines, the maculae surrounded with white. Arizona.
- modestella.* **P. modestella** B. & McD. (47 f) is similar to *groteana*, but smaller and darker coloured, almost the whole forewing being blackish-brown without grey powdering, all the markings being extinct excepting the posterior transverse line which is distally, particularly above the hind-margin, broadly bordered with white. Fringes not speckled. California.
- anxia.* **P. anxia** Sm. (47 g) is neither dissimilar to *groteana*, but discernible by a whitish median band of the hindwing exhibiting more or less the shape of two spots. Forewing lighter, greyer, more intensely marked, particularly conspicuous by an undulate line being twice angular almost to the margin and being proximad broadly shaded with dark; the fringes are very distinctly speckled. New Mexico.
- basifugens.* **P. basifugens** Dyar is ochreous-grey on the anterior body and the base of the wing, otherwise black with ochreous-grey fringes; the maculae are marked by light powdering like the finely dentate postmedian line, behind it the wing is somewhat less deep black; undulate line light, dentate. Hindwing yellowish-white with a broad dark margin. Texas.
- searpunctata.* **P. searpunctata** B. & McD. (47 g) has dull black forewings with 3 jet-black transverse lines, a white, somewhat brown-centred reniform macula with a whitish costal-marginal patch before it, and a feeble white undulate line. Hindwing black with 2 large round white spots. California, where the insect flies in the hottest sunshine around bushes of Apocynum.

Subfamily: **Heliothinae.**

This small, well defined group we range here according to the disposition of the work, although its right place would have been with the *Agrotinae* of which they form a well characterized division easily recognizable by the shape, colour, and marking. They are mostly bright-coloured, predominantly white and yellow, often also with a pink tint, belonging to the diurnal members of the Noctuids, swarming either in the sunshine and drinking from blossoms, or at least representing very fugitive insects that are easily scared up. In their external structure they entirely correspond with the *Agrotidae*, particularly exhibiting the same spined middle and hind tibiae, and all the genera excepting *Copablepharon* also exhibit at the end of the anterior tibia one or several mostly very strong bent horny stings, or several claw-like spines; most of the genera besides show on the frons appendages or horny plates. A small division is also here „anartoid“, i. e. the eyes are small and bean-shaped or reniform, the body being chiefly covered with hair; the latter form the most fugitive and heliophile representatives. Only of few species the larvae are known, exhibiting mostly strong tubercles provided with a hair, and chiefly living on blossoms and being in accordance to their colour often coloured pink or violet.

1. Genus: **Heliolonche** Grt.

Proboscis developed, the straightly porrect palpi are long-haired, particularly on the middle joint, the body being likewise clad with long and scrubly hair; the frons does not project, but it exhibits a horny plate below; the smooth small eyes are narrow bean-shaped. ♂ antennae ciliated. The long-haired anterior tibiae exhibit inside at the end a long bent horny sting, outside a shorter one. Shape of wings relatively narrow with an oblique distal margin, in the neuration not different from the general Noctuid type. 3 species are known so far. Type: *H. modicella* Grt.

- modicella.* **H. modicella** Grt. (47 g) has purple red forewings strewn with black, with a broad ochreous-yellowish oblique band from the apex to the centre of the hind-margin, and a small spot in the cell-end. Hindwing blackish-brown with ochreous-grey fringes. Colorado, Oregon, California.
- indiana.* **H. indiana** Kwat is above almost uni-coloured purple carmine on the forewing, in the somewhat paler marginal area sometimes a yellowish ground appears, the median area often somewhat lighter purple. Hindwing unicoloured black with white fringes. Indiana, in May and June.
- dysseteta.* **H. dysseteta** Dyar (47 g) has dark brown forewings strewn with ochreous, in the lighter median area with a round dark, light-centred reniform macula and a fine dark postmedian line behind it. Hindwing black with a short yellow discal band and light yellow fringes. Mexico (Guerrero) in November.

2. Genus: **Heliophana** Grt.

Separated from the preceding genus by more obliquely rising palpi and a stronger frontal projection with a bent horny plate below it. The short broad anterior tibiae exhibit inside 2, outside 3 bent horny stings; the small eyes are here also bean-shaped. Only 3 small North-American species. Type: *H. mitis* Grt.

H. bina Guen. (47 g). Forewing claret-coloured, in the basal and median areas brown, in the marginal *bina*. area mixed with olive-yellow, with very indistinct transverse lines proceeding from small white costal-marginal spots. Hindwing black, base, 2 discal spots, and fringes yellow. The ♀ is darker red. From New York and Nebraska.

H. amaryllis Sm. (47 g). Forewing greyish-brown, in the median area yellowish-white, with whitish *amaryllis*. transverse lines bordered with a darker shade, and black ring-shaped and reniform maculae; undulate line and the veins in the marginal area whitish. Hindwing black with a broad whitish median band in which there is a large black spot at the lower cell-end. California.

H. mitis Grt. (= *obliquata* Sm.) (47 g) is on the forewing ochreous-yellowish with 2 red-brown *mitis*. oblique bands strewn with black. Hindwing blackish-brown with light yellow fringes. Texas, Mississippi.

3. Genus: **Heliosea** Grt.

Structure the same as in the preceding genus, but with only one bent horny sting on the inside of the anterior tibiae and 3 such stings on the outside. But one species: type: *H. pictipennis* Grt.

H. pictipennis Grt. (47 g). Forewing ochreous-yellowish, basal area, costal margin, the posterior *pictipennis*. transverse line and distal margin with the fringes carmine. Hindwing black with a white median band. California.

4. Genus: **Melicleptria** Hbn.

It comprises the small anartoid species of the genus denoted by HAMPSON as *Heliothis* O. Structure of *Heliophana*, but the short broad anterior tibiae are on both sides spined almost in their whole length and exhibit at the end inside a long bent horny sting, outside a shorter one. Type: *cardui* Hbn. (Europe).

M. celeris Grt. (47 g) is easily separable from all the others by the deep hemochrome hindwings. *celeris*. Forewing dark purple red; in the median and marginal areas powdered with olive, the maculae and a Y-shaped band below the cell whitish. California.

M. scissa Grt. (47 h) has blackish forewings clothed with red-brown hair, with a whitish triangular *scissa*. spot in the centre of the costal-margin and a small oblique black, white-haired reniform macula; behind the indistinct postmedian line the marginal area is powdered with grey. Hindwing black, with a large yellow median spot enclosing a black discal luna. Florida.

M. graefiana Tepp. (47 h). Forewing light bluish-red with yellowish-grey transverse lines and a similar *graefiana*. spot between and below the maculae. Marginal area light grey. Hindwing yellow with a black margin and medium spot. California.

M. pulchripennis Grt. (47 h) has greyish-brown forewings suffused with purple red excepting the *pulchripennis*. disc, with silvery blue transverse lines; the red reniform macula is mostly situate in a yellowish-white spot. Hindwing blackish with a large yellowish-white discal spot extending to the costal margin. — In f. **languida** *languida*. Edw. the purple red powdering is almost entirely absent. From Colorado and California.

M. antonio Sm. (47 h) is similar, but smaller, more distinctly carmine in the basal area, costal margin *antonio*. and hind-margin, in the median area yellowish, subterminally olive-brown and in the marginal area yellowish-brown, easily discernible by quite black hindwings with a bronze lustre and white fringes. Texas.

M. fasciata Edw. (= *sabulosa* Sm.) (47 h). Forewing yellowish, in the basal area suffused with red *fasciata*. as far as the distinct carmine antemedian line, of the same colour the posterior transverse line and the costal margin between both, as well as the fringes, the narrow reniform macula and the more or less distinct undulate line indistinct, dark. The black hindwing exhibits in the ♂ a whitish median band which is absent in the ♀. California.

M. cresina Sm. (47 h). Forewing yellow, in the basal and postmedian areas suffused with carmine, *cresina*. the same at the costal margin of the median area, in the marginal area tinted olive, transverse lines and a large cellular macula dark, powdered with carmine. The black hindwing exhibits a narrow purely white median band which widens towards the costal margin and reaches neither to the costal margin nor to the hind-margin; fringes yellowish. California, in April.

- dobla*. **M. dobla** Sm. (47 h). The blackish-brown forewing is irregularly strewn with whitish, the median area whitish, towards the hind-margin blackened; transverse lines whitish, the posterior line S-shaped, the maculae blackish, the most distinct the large almost quadrangular reniform macula. Hindwing black with white fringes. California, in April.
- edwardsi*. **M. edwardsi** Sm. (47 h) has dingy yellowish-reddish forewings powdered with smoke-brown, in the basal and subterminal areas of a purer brown. of the same colour is the undulate line which is acute-angled behind the cell; the light transverse lines are bordered with blackish-brown, the posterior line being almost rectangularly flawed; maculae very large, dull brown. Hindwing yellowish-red with a black median spot and marginal band, in the latter analwards with a yellowish-red line. Yellowstone Park.
- villosa*. **M. villosa** Grt. (= *pauillus* Grt.) (47 h) is on the black forewing powdered with grey and red-brown, in the marginal area greyer, with lighter transverse lines and a whitish cellular spot behind the antemedian line in the ♂, in the ♀ with a Y-shaped band behind it. Hindwing black with 3 yellowish-white spots which are larger in the ♀. Colorado, California. — f. **sexata** Sm. (47 i), from Manitoba, is smaller, stouter, with almost quite black hindwings on which a yellowish-red median band is indistinctly marked.
- subatra*. **M. subatra** Sm. (47 i) is hued with dark carmine on the smoky brown or blackish forewing, in the median area excepting the margins yellowish or whitish, enclosing a very large blackish reniform macula; the distinct undulate line is yellowish. Hindwing black with a bronze lustre, in the yellowish or whitish median band with a large black discal spot. Washington, Montana.
- persimilis*. **M. persimilis** Grt. (= *flavidenta* Sm.) (47 i). Forewing yellowish, basally and subterminally carmine powdered with olive, the anterior transverse line with a pointed tooth proximad in the cell; beneath the large maculae of a carmine tint the median area is powdered with olive. Hindwing black with olive-yellow fringes and a yellowish median band which is divided into 2 spots by the large black discal spot. Utah, in July.
- triolata*. **M. triolata** Sm. (47 i). Forewing dull smoky brown, the median area and undulate line yellowish, the large maculae smoky brown, the reniform macula strangulated. Hindwing black with a yellow disc enclosing a large black spot. California.
- dubitans*. **M. dubitans** Tepp. (47 i) resembles *triolata*, but it is larger and paler, the ground-colour more yellowish, the transverse lines and the median area whitish; maculae smaller, of a conspicuous grey finely surrounded by blackish in the light median area, the reniform macula being produced proximad on the median. Hindwing black with a large yellow discal spot enclosing a black spot. Nevada.
- perminuta*. **M. perminuta** Edw. (47 c) is strewn with white on the dark brown forewing, with a Y-shaped whitish median band and rather indistinct whitish transverse lines. Hindwing black with 2 white spots. California, Sierra Nevada.
- sueta*. **M. sueta** Grt. (47 i). Forewing black strewn with grey and purple red scales, with a Y-shaped whitish median area. Hindwing black with larger white spots than in the very similar *perminuta*. Colorado. — f. **californica** Grt. is somewhat smaller, more intensely powdered with purple red and less with grey, the Y-shaped median area of a somewhat more yellowish tint. Hindwing more extensively black. California.
- aetheria*. **M. aetheria** B. & McD. (47 i) is allied to *sueta*, but the ground-colour is more olive-green, as far as the subterminal line suffused with purple, with a blue costal-marginal spot near the base and with bluish transverse lines; in the light yellowish median area is the large quadrangular purple-tinted reniform macula. Hindwing black with a yellow median band which is strangulated or interrupted in the middle. Arizona.
- honest*. **M. honesta** Grt. (= *kasloa* Sm.) (47 k) differs from the preceding ones in the much more extensively yellowish-white spotted median area, the undulate line being replaced by a white macular band, the fringes being speckled white. The white band of the hindwing is much broader. Brit. Columbia, Oregon.

5. Genus: **Melaporphyria** Grt.

Very similar to the preceding genera and likewise with small bean-shaped eyes, separated by short correct palpi and a plain rounded frontal projection without a horny plate below it. The anterior tarsi are not so short and broad, but more slender, laterally spined with a long slender horny sting inside and a shorter one outside at the end. Type: *M. immortua* Grt.

- immortua*. **M. immortua** Grt. (47 k) has blackish forewings powdered with purple excepting the hind-margin and the yellowish-brown external area, with grey veins as far as the undulate line; between the light grey transverse lines there is a blackish spot at the cell-end. Hindwing yellowish-brown, two postmedian transverse bands and the basal half blackish. New York to New Mexico.

6. Genus: **Dysocnemis** Grt.

Separated from the other anartoid genera by the absence of any horny sting at the end of the anterior tibiae which are laterally spined. The short palpi are more upturned than in *Melaporphyria*. Type: *D. belladonna* Edw.

D. prorupta Grt. (= *venusta* Edw., *fimbria* Williams) (47 k). The blackish-brown forewing is suffused with carmine and exhibits a broad white median area which is powdered with blackish-brown or red-brown, enclosing a small somewhat darker cell-end spot which is coherent with a costal-marginal spot; the white area pointedly projects towards the margin on the lower radial branch. The black hindwing shows a very large white median spot. Oregon, California. *prorupta*.

D. belladonna Edw. (47 k) is somewhat similar, but easily discernible by large blackish-brown ring-maculae and reniform maculae; the white median area is of a triangular shape and extends neither to the costal margin nor to the hind-margin, behind the whitish undulate line small brown triangular marginal spots are visible. Hindwing black with a large white discal spot. Utah. *belladonna*.

D. borealis Hamps. (47 k) has blackish-brown forewings without the white band of *belladonna*, the median area is only somewhat lighter, but not distinctly defined, enclosing the small black reniform macula. Hindwing as in the preceding species, the white spot slightly tinged with yellowish. Canada. *borealis*.

D. oregonica Edw. (47 k). Forewing black powdered with olive, the two similarly coloured maculae in the light yellowish-white median area; undulate line indistinctly lighter. Hindwing black with a yellowish-white spot enclosing a large black discal spot; in the centre of the margin spotted yellowish. From Oregon and Washington to Colorado and California. *oregonica*.

7. Genus: **Incita** Grt.

Enumerated by HAMPSON as „*Pyrocleptria*“. Only one small variable species of the same structure as the preceding ones, but the anterior tibiae are short and broad, laterally spined with a long bent horny sting inside, a short one outside at the end. In the thoracal hair broad scales are intermixed. Type: *I. aurantiaca* Edw.

I. aurantiaca Edw. (= *californica* Hamps.) (47 k) has red-brown forewings mixed with ochreous, with light transverse lines bordered with blackish, and with black maculae powdered with red-brown, between and behind them there are small ochreous-yellowish spots; before the grey undulate line with a brownish subterminal band. Hindwing orange with a black discal spot and marginal band. California. — f. **tenuimargo** B. & McD. (47 k) is the race from Arizona with much lighter forewings showing an ochreous-yellowish median and marginal area, with a very narrow marginal band of the hindwing on which the discal spot is also much smaller. *aurantiaca*. *tenuimargo*.

8. Genus: **Pseudotamila** Sm.

Very closely allied to *Incita*, but with a small tuft on the metathorax and without a horny plate below the round frontal projection, which is present in *Incita*. Three species have been described so far. Type: *P. vaccinia* Edw.

P. vaccinia Edw. (= *vanella* Sm.) (47 l). Forewing black intermixed with red-brown or claret-coloured and white scales, with a white median area powdered with grey and red-brown, the dark reniform macula situate therein is connected with a costal-marginal spot; the anterior transverse line is black, the posterior line white, bordered with brown; the undulate line is composed of small black and white sagittiform spots. Hindwing black with a white median band enclosing a large discal spot. Nevada, California. *vaccinia*.

P. carminatra Sm. (47 l). Forewing ochreous-yellowish, powdered with carmine, with a large brown reniform macula in the somewhat lighter median area, and with smoke-brown indistinct transverse lines, behind the distal line somewhat lighter. Hindwing unicoloured black with white fringes. A small species from Colorado, at an altitude of 6000 ft. *carminatra*.

P. avemensis Dyar (47 l) has light ochreous-yellowish forewings, the basal area and a postmedian band being bronze-brown, the median area being also somewhat powdered with bronze, with 2 straight black lines bordering on the reniform macula; transverse lines irregular, the posterior line broken up into dots. Hindwing black. Manitoba. *avemensis*.

9. Genus: **Heliothis** Hbn.

Enumerated by HAMPSON as „*Chloridea* Westw.“ Here begin the species with large round eyes. Proboscis developed, palpi obliquely rising, below hairy, frons with a roundish projection. Thoracal hairing intermixed with scales. The laterally spined anterior tibiae exhibit at the end a pair of slender horny stings. All are very

smoothly scaled. Quite a number of species from all faunal districts. Type: *H. dipsaceus* L. (Europe).

Sect. I (*Heliocheilus* Grt.) in the ♂ with a veined hyaline membrane in the cell of the forewing.

- chloropha*. **H. chloropha** Hbn. (= *lupata* Grt.) (47 l). Forewing ochreous-yellowish, in the marginal area more red-brown with transverse lines being marked by black and white dots, the posterior line distally with a red-brown band; from the lower cell-angle a median shadow extends to the hind-margin. Hindwing reddish-yellow with a darker median spot and postmedian line. Known from Texas.
- turbata*. **H. turbata** Wkr. (= *albidentina* Wkr.) (47 l) is much darker ochreous-brown, with white dentate transverse lines, the anterior line broken up into dots, before the posterior line with a red-brown band with black dots; the indistinct dark maculae are centred with white. Hindwing ochreous-brown with a darker margin in the centre of which there is an ochreous-red spot. Florida.
- paradoxa*. **H. paradoxa** Grt. (47 l). Forewing light ochreous-brownish, only the posterior transverse line is visible as a row of black and white dots. Hindwing yellowish-white with a dark marginal band containing a light spot. The ♀ is more intensely marked with distinct maculae and a dentate postmedian line. From Texas and
- hyperfusca*. Colorado to Mexico. — ab. **hyperfusca** Strd. (= ab. 1 *Hmps.*) is in both sexes darker brown, strewn with black, with 3 distinct white-centred maculae, distally to the postmedian line with a darker band. Hindwing with a darkened basal area.
- cystiphora*. **H. cystiphora** Wllgr. (= *onca* Wllgr.) (47 l) is somewhat similar to *paradoxa*, more greyish-brown, with a more intensely dentate, distinct black postmedian line distally bordered with white; the whitish dentate undulate line is on both sides shaded with brown; the coniform and reniform maculae are black, the latter with an ochreous-yellow ring. Hindwing ochreous-brownish, in the basal area darkened, with a brown median spot and postmedian line, in the dark marginal band with small yellowish spots. Panama, Galapagos Is., also reported from Hawaii.

Sect. II (*Chloridea* Westw.) ♂. Forewing normal.

- ononis*. **H. ononis** Schiff. (= *septentrionalis* Edw.) (47 l). This small species occurring also in Europe and Asia has been described in Vol. III, p. 245, and figured on pl. 50 k. It has been found in America from Hudson Bay and British Columbia to Colorado.
- phloxiphagus*. **H. phloxiphagus** Grt. & Rob. (= *phlogophagus* Grt. & Rob., *armiger* Drc. nec Hbn.) (47 m) is in the nomenclatural form light olive-brownish, with dentate transverse lines being broken up in dots; the ring-macula is composed of 3 dots, the reniform macula is black with dots in the corners, before the row of dots of the undulate line with a darker band. Hindwing yellowish-white with a black-striped basal area, a large discal spot and
- interjacens*. marginal band with a light double spot in it. From British Columbia to Mexico. — f. **interjacens** Grt. has more
- luteitincta*. yellowish-reddish forewings, and f. **luteitincta** Grt. (47 m) has bright orange-yellow hindwings; it is the form
- acesias*. predominating in Mexico, where it attains a particular size (= **acesias** Fldr.). The larva is green with a double dorsal line filled with a darker black, and a light lateral band being below bordered with white. It lives on *Grindelia squarrosa*.
- obsoleta*. **H. obsoleta** Fabr. (= *armigera* Hbn.) (47 m) is very variable particularly in the size, the forewing varying from olive-grey to light reddish or yellowish-brown, more or less strewn with black, with indistinct fine transverse lines, the posterior line double and more strongly dentate with fine white vein-dots and with brown-centred maculae which are also surrounded with brown, generally with a darker subterminal band. Hindwing yellowish-white with a broad blackish-brown marginal band. This insect being distributed in the whole world has also been dealt with in Vol. III and X. It occurs in the whole of America from Canada down to Chile. — Larva green with white longitudinal lines, the dorsal line bordered with black, with a brown
- umbrosa*. head and black neck-shield. On many plants and particularly noxious to the cotton-plant. — f. **umbrosa** Grt. is a form darkened by brown.
- chilensis*. **H. chilensis** Hmps. (47 m). Forewing yellowish olive with a red-brown costal margin and transverse lines broken up into dots, the maculae being darkened. Fringes pink. Hindwing light yellow with a broadly darkened marginal band, in the ♀ quite brown. Chile.
- virescens*. **H. virescens** Fabr. (= *viridescens* Wkr., *prasina* Wkr., *pyraloides* Wkr., *tergemina* Fldr.) (48 a). Forewing ochreous yellowish-green with a reddish costal margin and 3 whitish oblique bands distally bordered with a darker green, and an indistinct oblique reniform macula. Hindwing diaphanous white with a faded
- subflexa*. dark, often reddened marginal band which is absent in — f. **subflexa** Guen. — In f. **rhexia** Abb. & Sm. all the
- rhexia*. reddish tints are absent, the colour is darker, more blackish-brown, the light oblique stripes are more distinctly
- spectanda*. prominent. — **spectanda** Streck. (= *molochitina* Berg) has a double white median band. — f. **distincta** Schs.
- distincta*. (48 a) is not green but yellowish-brown, more intensely strewn with blackish. Very widely distributed from Canada to Peru. — The green larva which is dorsally and laterally shaded with black and has a broad white lateral band strewn with reddish lives on many kinds of Solanaceae, particularly also on tobacco.

H. sturmhoefeli *sp. n.* (47 m) is somewhat similar to *virescens*, smaller on an average, on the forewing whitish olive-grey, with a silky gloss, in the hindmarginal portion strewn with black; transverse lines absent except the blackish postmedian line extending from shortly before the apex to the distal third of the hindmargin and being crossed by lighter veins, behind it the subterminal area is darkened by a greyish green; the undulate line is composed of black vein-dots; the ring-macula and the reniform macula are marked by blackish diffuse spots; on the distal margin there are distinct black dots. Hindwing diaphanous white with a broad black, proximad faded marginal band and small discal spots. Discovered by Mr. STURMHOEFEL, described according to 2 ♀♀, types in the Mus. Senckenberg. Central Brazil. *sturmhoefeli.*

10. Genus: **Oxylos** *Grt.*

Distinguished from *Heliothis* by the absence of the horny plate below the round frontal projection, by longer palpi, and 2 long bent horny spines, 3 thorns inside at the end of the anterior tibia and 4 horny spines outside. The thorax is only clothed with hair. But one species:

Type: *O. citrinellus* *Grt.*

O. citrinellus *Grt.* (48 a) has quite monotonously light yellow forewings with a but very feebly marked reniform macula and subterminal shadow. Hindwing white with a black discal luna and a narrow marginal band. Known from Texas. *citrinellus.*

11. Genus: **Chloreleptria** *Hmps.*

Like *Oxylos*, but the anterior tibia exhibits inside at the end but one long bent horny spine and 2 thorns, outside also 4 horny spines. The last palpal joint is somewhat horizontal.

Type: *Ch. simplex* *Sm.*

Chl. simplex *Sm.* (48 a). Forewing pale yellowish-green with a whitish-green costal margin; hindwing ochreous-yellow with a discal luna and marginal band being feebly powdered with greyish-brown. Colorado. *simplex.*

Chl. felicitata *Sm.* (= *imperialis* *B. & McD.*) (48 a) has olive-yellow forewings, powdered with pink in the basal area. Hindwing blackish with white fringes. Described from Utah. *felicitata.*

12. Genus: **Dasypoudaea** *Sm.*

Characterized from the allies by the thickly haired body with a quadrangularly scaled thorax exhibiting a small tuft behind. The short broad anterior tibia exhibits only 2 horny spines at the end, the longer of which is inside. 2 species are known:

Type: *D. lucens* *Morr.*

D. lucens *Morr.* (48 a). Forewing carmine intermixed with bluish-white hairs, and with white veins, with dentate white transverse lines and undulate line. Hindwing yellowish with a black discal luna and marginal band, in which there is analwards a yellowish dentate line. Nebraska, Montana, Colorado, New Mexico. — f. **luxuriosa** *Grt.* is an alpine form from the Rocky Mountains with much brighter orange-yellow hindwings, the black colour being reduced. *lucens.*

D. meadi *Grt.* (48 a) is very similarly marked, but much smaller and paler, light yellow-greenish, powdered with blackish, the silvery white transverse lines are broader, bordered somewhat with blackish, the greenish maculae in white spots, the fringes speckled green and white. Hindwing white with a black discal luna and marginal band in which there is a white subterminal spot. Oregon, Montana, Colorado. *meadi.*

13. Genus: **Rhodophora** *Guen.*

Structure of *Dasypoudaea*, but below the rounded frontal projection there is a slightly bent horny plate. The anterior tibia is spined as in the preceding genus, but laterally on both sides with thorns. The thorax lacks the admixture of scales. 2 species:

Type: *Rh. gaurae* *Abb. & Sm.*

Rh. gaurae *Abb. & Sm.* (= *matutina* *Hbn.*) (48 b) has light yellow forewings powdered with pink, particularly in the upper half of the basal area and at the distal margin, with a broad dark pink postmedian band being proximad faded, distally distinctly defined, and on the discal fold proximad angular. Hindwing white, at the margin feebly pink. Georgia, Colorado to Mexico. — The larva is orange with black transverse stripes on each ring, and lives on *Gaura*. *gaurae.*

florida. **Rh. florida** Guen. (48 h) is almost quite pink, only in the marginal area ochreous-yellow; the latter colour is also at the base of the hind-margin and occasionally in a Y-shaped median band. Hindwing yellowish-white. Canada, Eastern States, Utah. — The green larva with a reddish lateral spot on the 2nd ring and darker dorsal and lateral lines lives on blossoms of *Oenothera*.

14. Genus: **Manruta** Sm.

A genus rather different from its allies. Proboscis stunted, frons without a projection, palpi small, thinly haired, eyes round, but not large. ♂ antennae bipeetinate. The thick thorax is very densely clothed with long woolly hair. The broad short anterior tibia at the end inside with a long bent horny spine, outside with a shorter one and 2 thorns on the side. Forewing short and broad. But one species of a Bombyeid exterior.

Type: *M. elingua* Sm.

elingua. **M. elingua** Sm. (48 b). The yellowish-white forewing is powdered with pink and strewn with blackish, with blackish faded transverse lines, at the anterior line a long coniform macula; instead of the undulate line single small dark spots, in the blackish-strewn marginal area; maculae white. The whitish hindwing is feebly smoky at the margin. Arizona.

15. Genus: **Thyreion** Sm.

In the habitus likewise resembling Bombyeids, the thorax covered with thick woolly hair. Proboscis developed, the short palpi rather porrect, below the rounded frontal projection with a horny plate; ♂ antennae serrate and tuftedly ciliated. The short broad anterior tibia exhibits at the end inside a long bent horny spine, outside 3 short ones. 4 species have been described.

Type: *Th. snowi* Grt.

snowi. **Th. snowi** Grt. (48 b). Forewing light yellow, in the basal area with 3 pink stripes, with feebly marked pink transverse lines and a longitudinal stripe on the discal fold to the posterior line which extends obliquely to the apex. The yellowish-white hindwing is a little hued with greyish-brown, at the margin tinted with pink. Kansas.

rosea. **Th. rosea** Sm. (= *stena* Sm.) (48 b) has quite light yellow forewings with a red longitudinal stripe below the base of the cell and a postmedian transverse band which is mostly broken up in 2 spots on the folds. Hindwing greyish-brown with white fringes. — The white larva has brown tubercles, head, neck-shield, and anal shield, and lives in leaves and onions of species of *Allium*. Colorado.

ligeae. **Th. ligeae** Sm. (48 b). The narrow forewing is somewhat silky lustrous white, in the basal area as far as the antemedian line suffused with pink, and with a dull pink band behind the postmedian line. Hindwing greyish-brown with yellowish-white fringes. California.

gelotopoeon. **Th. gelotopoeon** Dyar (48 e) is externally very similar to *Hel. obsoleta*; forewing brown with a darker subterminal band and fine brown transverse lines, the anterior line forming 3 bows, the posterior line being dentate with white dots behind it; between the maculae, which are finely surrounded and centred with dark, there is a median shadow. Hindwing dingy whitish with a feeble discal line and a broad blackish marginal band containing a light spot. Described from Argentina.

olivofusa. **Th. olivofusa** Dogn. Body white with a feebly greenish tint, palpi tinted with pink. Forewing yellowish-white, feebly suffused with greenish, with 2 olive transverse stripes, the anterior one extending from the costal margin about in the centre of the cell to the base of the hind-margin, the second subterminally from shortly before the apex to the third quarter of the hind-margin; the lines may grow very broad in the very variable species, particularly in the ♀, so that sometimes only a white band remains before the subterminal line. Hindwing white, in the distal half of the veins greenish, at the hind-margin red-brown. Expanse of wings: 26 mm. Tucuman.

riojana. **Th. riojana** Giac. is smaller than *olivofusa*, more gracefully built; similarly variable, very light yellowish, chalky white. In the ♀ the hindwing is suffused with brownish-grey, with a hardly visible row of marginal dots. Expanse of wings: 22 to 23 mm. Likewise from Argentina (La Rioja).

16. Genus: **Rhododipsa** Grt.

In the structure similar to the preceding ones, but the more erect palpi are longer, and the thorax is clothed with hair intermixed with scales. ♂ antennae plainly ciliated; anterior tibia inside with 2 thorns and a long bent horny sting at the end, outside with 4 small spines.

Type: *Rh. volupia* Fisch.

Rh. miniana *Grt.* (48 c). Forewing light orange-yellow, in the discal area white with a feebly curved yellow median line in it, and a dentate red undulate line. Hindwing red, base and hind-margin orange-yellow. New Mexico.

Rh. pallicincta *Sm.* (48 c) was described as a *Schinia*; forewing yellowish, in the basal area more whitish with broad white faded transverse stripes, without maculae; occasionally the undulate line is marked by proximal brown powdering at the costal margin. Hindwing blackish, tinted with pink, with light fringes. Utah, California.

Rh. volupia *Fitch.* (48 c). Forewing carmine-pink, with 2 closely adjacent ochreous-yellowish faded transverse lines, from the posterior line whitish vein-streaks proceed, both the lines being connected on the submedian fold; the undulate line is finely dentate, fringes orange like the body which is pink on the ventral side. Hindwing carmine with orange fringes. Texas, Colorado. — In f. **volupides** *Strd.* (= ab. 1. *Hmps.*) the white transverse lines are narrower and do not anastomose on the submedian fold, the undulate line is obsolete.

Rh. masoni *Sm.* (48 c) is similar to *volupia*, with darker carmine forewings, brownish-orange transverse lines and fringes, the two middle lines being submedianly connected. Hindwing blackish-brown with a carmine hue, fringes orange-brown. Colorado.

Rh. aden *Streck.* Ground-colour purple carmine powdered with grey, the transverse lines are broad, faded and white; at the cell-end there is a dark reniform macula; fringes as well as the hindwings brownish-black. Colorado.

17. Genus: **Podagra** *Sm.*

Very closely allied to the following genus, with shorter palpi and a stronger frontal projection; the body is rather slim compared with the long and broad wings. The tibiae are all short and remarkably thickened, spines and thorns exactly as in *Prochloridea*, only the inside spine being much shorter. Only 1 species:

Type: *P. crassipes* *Sm.*

P. crassipes *Sm.* (48 c) is a very different insect. Forewing light ochreous-brownish, strewn with blackish particularly at the costal margin and in the hindmarginal portion of the median area; the blackish transverse lines are interrupted in the shape of spots, the posterior line forms in the lower half a flat distally concave bow and is here double owing to a shadowy stripe outside, it rises near the apex from a darker spot. Fringes speckled. Hindwing white. Arizona.

18. Genus: **Prochloridea** *B. & McD.*

Proboscis developed, palpi erect; below the roundish frontal projection the horny plate is absent; thorax clad with hair intermixed with scales. On the anterior tibia there is at the end outside a slender horny spine and 3 or 4 thorns on the side, inside a similar terminal spine and a small thorn. The posterior tibiae are remarkably spineless, only the middle tibiae exhibit thorns.

Type: *P. modesta* *B. & McD.*

P. modesta *B. & McD.* (48 c). Forewing brown, in and behind the cell-end, and at the hind-margin strewn with a somewhat darker colour; the markings are quite indistinct, only the reniform macula is visible as a small white strigiform spot; the entirely obsolete dentate postmedian line is distally bordered with whitish; in the lighter marginal area there are a few darker small spots. Hindwing white, at the distal margin somewhat smoky. New Mexico.

P. madonna *B. & McD.* (48 d) may be merely a race of *modesta*, it is smaller and greyer. Forewing uniformly black, scaled white and grey, with 2 broad light brown longitudinal stripes from the base of the cell to the apex and anal angle; transverse lines very indistinct, light grey, the maculae being also quite indistinct, in the marginal area with blackish internerval streaks. The white hindwing in the distal third strewn with dark. California.

19. Genus: **Lygranthoecia** *Grt. & Rob.*

Proboscis developed, palpi obliquely rising, below the roundish frontal projection with a bent horny plate. Anterior tibia short and broad with 2 long bent horny spines and 2 to 4 thorns inside and 3 to 5 horny spines outside. Quite a number of mostly rather small species with variegated markings.

Type: *L. marginata* *Hew.*

L. bimatrix *Harv.* (48 d) is uni-coloured silvery white on the forewing and hindwing, the costal-marginal half of the hindwing being somewhat smoky. Body somewhat more yellowish white, tibiae and tarsi brownish-grey. From Texas.

- carolinensis.* **L. carolinensis** B. & McD. (48 d) is allied to *bimatrix*, but it is smaller, and the forewing is not white, but intensely lustrous light ochreous-yellow, on the collar dark olive. Hindwing smoky-brown, towards the base ochreous-yellow with a large discal spot. From North-Carolina.
- concinna.* **L. concinna** Sm. (48 d) has comparatively long and narrow wings; the forewing is olive-ochreous, basally, subterminally, and in the reniform macula chocolate-brown, with white transverse lines, the distal line behind the cell punctiform. Hindwing blackish, basally yellowish-red. Texas.
- mortua.* **L. mortua** Grt. (48 d). Forewing light greyish-brown, powdered with reddish, basally and subterminally darker red-brown with lighter transverse lines between; the undulate line is composed of dark dots. Hindwing orange with a blackish discal spot and marginal band which is spotted orange in the centre. The ♀ is darker, in the basal area of the hindwing blackish. — f. **packardii** Grt. is an intensely blackish form with almost entirely black hindwings, the yellow colour being reduced. — f. **nobilis** Grt., on the contrary, is more variegated, with redder forewings and bright orange hindwings. Texas, Colorado, Arizona.
- labe.* **L. labe** Streck. (48 d) was considered to be a form of *mortua*, but it is a distinct species and separated by quite obsolete markings. Texas.
- amblys.* **L. amblys** Dyar (48 d) is a small species, olive-ochreous, basally and subterminally pinkish-brownish, with whitish transverse lines, with a large dark median spot. Hindwing ochreous-yellow, basally as well as at the costal margin and hind-margin blackened, with a broad black marginal band and discal luna. The ♀ is darker and more contrastingly coloured. Mexico (Guerrero, Morelos).
- errans.* **L. errans** Sm. (48 d) is similar to *amblys*, larger, with narrower wings, the whole body ochreous-yellow, forewing ochreous-yellow and olive-brown with a broad brown median shadow before the reniform macula which is surrounded with brown, in the brown marginal area with a lighter undulate line. Hindwing yellow with a black marginal band and discal spot. Arizona.
- meskeana.* **L. meskeana** Grt. (= *fastidiosa* Streck.) (48 e) is olive-brown on the forewing, in the median area ochreous-yellowish hued with pink, in the marginal area light olive, with white transverse lines and a dark discal spot. Hindwing black with 2 round yellowish median spots and obsolete spots before the centre of the margin. Texas to Mexico (Jalapa).
- rufimedia.* **L. rufimedia** Grt. (48 e) is very similar to *meskeana*, but whereas in the latter the abdomen is unicoloured yellow, it shows here blackish-brown bands; the postmedian band of the forewing is darker; on the hindwing the median spots are much smaller, and the marginal spots are entirely absent. Beneath the light parts are yellowish, in *meskeana* white. From Florida.
- siren.* **L. siren** Streck. (48 e). Forewing greyish-yellow, basally and postmedianly red-brown, bordered by black transverse lines, and with a black discal spot and a red-brown median shadow before it. Hindwing all black with white fringes. Texas.
- tuberculum.* **L. tuberculum** Hübn. (= *dorsilutea* Wkr.) (48 e). Forewing light reddish-brown with lighter transverse lines and blackish irroration behind the distal line. Hindwing orange with a black discal spot, the two ends of which are united with the broad black margin. Pennsylvania, Georgia, Florida.
- obscurata.* **L. obscurata** Streck. (48 e) is a small species, on the forewing light yellow, basally and postmedianly olive-brown with a quadrangular large brown reniform macula which is broadly united with the brown basal area along the costal margin. Hindwing black with a yellow basal area. Pennsylvania.
- bicuspidata.* **L. bicuspidata** Sm. (48 e) has ochreous-yellowish forewings, basally and subterminally strewn with blackish, the reniform macula brownish-grey as well as a median shadow before it, being widened towards the hind-margin; the light undulate line is on both the folds strongly inwardly angled; fringes speckled with blackish. Hindwing black with a broad yellow median band which is parted by the discal spot. Texas.
- brevis.* **L. brevis** Grt. (48 e). Forewing on the yellowish-white ground red-brown and strewn with black, basally and postmedianly red-brown with light transverse lines and a dark reniform macula; fringes speckled brown. Hindwing blackish-brown with 2 yellowish discal spots. New York to New Mexico. — f. **atriles** Grt. is a ♀ form with quite black hindwings.
- approximata.* **L. approximata** Streck. is dull ochreous-yellow, basally and postmedianly blackish-brown, the strong white transverse lines are slightly dentate; before the quadrangular brown reniform macula a similar median shadow; behind the irregularly dentate undulate line the marginal area is light ochreous-yellow, or powdered with a brownish grey. Hindwing yellow-white, particularly basally powdered with black, with a black discal spot and the marginal band connected with it. Texas.
- septentrionalis.* **L. septentrionalis** Wkr. (48 e) is the darkest species, blackish-brown, only in some places powdered with a yellowish or reddish brown, with 2 yellowish spots in the centre of the cell and below it, as well as one at the apex; transverse lines indistinct, lighter. Hindwing blackish-brown. From Illinois.

L. biforma *Sm.* (48 f). Forewing yellowish-red, the somewhat lighter discal area edged by broad *biforma*, faded lighter transverse lines, the anterior line rectangularly broken, without a reniform macula. Hindwing quite black with yellow fringes. Texas.

L. inclara *Streck.* (48 f) is similar to *biforma*, light olive-yellow, with still lighter transverse lines *inclara*, and a blackish discal dot, the undulate line is darker. Hindwing uni-coloured blackish-brown. From Texas and Arizona.

L. thoreau *Grot. & Rob.* (48 f) is a larger species with brown forewings strewn with grey, in the *thoreau*, discal area of a purer grey with a brown reniform macula, edged by whitish transverse lines, the posterior line somewhat dentate; margin grey. Hindwing greyish-brown, at the margin darker. New York, Texas, Alabama, Kansas, Indiana.

L. ultima *Streck.* (48 f) resembles *thoreau*, the discal area is more yellow, strewn with red-brown. *ultima*. Hindwing ochreous-brownish with a brown discal spot and a broad marginal band. Texas.

L. hanga *Streck.* (48 f) is smaller, dull greyish-brown with a yellowish median area and a dark reniform-macular shadow; both the white transverse lines are denticulate, fringes speckled brown and white. Hindwing dingy white with a broad brownish-grey marginal band and a light subterminal line in it analwards. Texas.

L. marginata *Harv.* (= *rivulosa* *Guen.*, *contracta* *Wkr.*, *designata* *Wkr.*) (48 f) is one of the most *marginata*, common species, dark brown, strewn with grey, in the median area of a purer grey with a faded discal spot and white transverse lines. Hindwing greyish-brown with a small dark discal spot and margin. Southern and Central States. — ab. **constricta** *Edw.* is founded upon a specimen, in which the two transverse lines are *constricta*, united above and below the centre, so that there is one triangle each surrounded with white at the costal margin and hind-margin. North Carolina.

L. instrabilis *Sm.* (48 f). Forewing olive greyish-white, in the median area more yellowish, with white *instrabilis*, transverse lines, the anterior line rising on the base of the median vein, with a blackish discal spot. Hindwing white with a black discal lunula and subterminal band. California.

L. nubila *Streck.* (48 g). Forewing olive greenish-grey with a darker subterminal area; transverse lines *nubila*, quite obsolete. Hindwing yellowish-white with a black discal spot and marginal band. Texas.

L. dolosa *Streck.* (48 g). Forewing dull greyish-brown, basal and subterminal areas darker, edged *dolosa*, by indistinct whitish transverse lines. Hindwing white with a black discal lunula and a broad marginal band. Texas.

L. lora *Streck.* (48 g) has light ochreous forewings which are basally and subterminally brownish-grey, *lora*, the latter being almost black, with quite obsolete maculae and transverse lines, the fringes being speckled yellowish and brown. Hindwing yellowish-white with a black marginal band. Texas.

L. bifascia *Hbn.* (= *divergens* *Wkr.*) (48 g) is an entirely pale yellowish-white species, basally and *bifascia*, subterminally powdered with light olive-brownish, the median area edged by whitish transverse lines. Hindwing yellowish-white, at the margin slightly strewn with olive-brownish. Georgia, Colorado, Arizona.

L. imperspicua *Streck.* (= *digitalis* *Sm.*) (48 g) is very similar to *bifascia*, somewhat larger, more brownish, *imperspicua*, slightly strewn with grey, basally and subterminally darker brown with an obsolete dark discal spot, an almost straight undulate line. Hindwing yellowish-white, strewn with brown. Iowa, Texas.

20. Genus: **Schinia** *Hbn.*

Distinguished from *Lygranthoecia* only by the anterior tibiae being differently armed, exhibiting on the inside but one bent horny spine and 2 thorns, on the outside 4 or 5 horny spines distally increasing in size. The palpi are somewhat shorter and more correct. Numerous, mostly rather similar species.

Type: *Sch. gracilentia* *Hbn.*

Sch. sara *Smith* (48 g) is reddish-yellow on the forewing, strewn with brown, basally and subterminally *sara*, rust-brown, the transverse border-lines on the averted sides somewhat darker, between them a darker reniform-macula. Hindwing yellow, powdered with brown, particularly towards the margin. Arizona, New Mexico.

Sch. buta *Sm.* (48 g). Forewing yellowish-white, powdered with a lustrous reddish grey, the lighter *buta*, median area edged by broad whitish transverse lines which are bordered with a somewhat darker colour on the averted sides; from the oblong darker reniform macula a very feeble median line extends to the hind-margin; undulate line quite absent. Hindwing coloured like the forewing, basally somewhat lighter. California.

Sch. ernesta *Sm.* (48 g) is allied to the two preceding species, distinguished from *buta* by the presence *ernesta*, of an indistinctly defined undulate line running parallel with the margin, from *sara* by the light yellowish ground-colour being powdered with reddish, and the transverse lines being darker on the inverted sides. Colorado at an altitude of 5000 ft.

- luxa*. **Sch. luxa** Grt. (48 h) is an entirely light straw-coloured species, the fine transverse lines are broken up into single brown dots; in the centre of the cell a dot, at the end a small luna. Hindwing white, the distal margin and hind-margin feebly yellowish. Colorado, New Mexico.
- velutina*. **Sch. velutina** B. & McD. (48 h). Forewing almost purely white, only very feebly hued with yellowish, the transverse lines and the reniform macula are only in an oblique exposure to light recognisable as more purely silky lustrous white markings. Hindwing white. Utah.
- neglecta*. **Sch. neglecta** Streck. (48 h) is on the forewing light ochreous-yellowish, the transverse lines and the reniform macula are only extremely feebly indicated, fringes white. Hindwing white, particularly towards the hind-margin hued with yellowish. Colorado.
- cumatilis*. **Sch. cumatilis** Grt. (= *submula* Streck.) (48 h). Silvery white, the transverse lines on the averted sides, as well as the marginal area, accompanied by olive-grey bands. Hindwing of a pure white colour with a grey discal spot and narrow marginal band. Colorado, New Mexico.
- hulstia*. **Sch. hulstia** Tepp. (48 h) is extremely similar to *cumatilis*, but the hindwing lacks the discal spot. Texas, Colorado.
- tenuescens*. **Sch. tenuescens** Grt. (48 h) is much smaller, otherwise very similar to the two preceding species, the silvery white median area is very narrow, the olive-grey bands are widened, the marginal area much lighter olive-grey. Arizona.
- reniformis*. **Sch. reniformis** Sm. (48 i) is likewise similar; the antemedian olive-grey band only extends from the cell to the hind-margin and is very narrow, the olive-grey colour is very much intermixed with white, at the cell-end with a larger grey reniform macula being centrally strangulated. Colorado.
- oculata*. **Sch. oculata** Sm. (48 i). Forewing silvery white, body, basal area, and marginal area powdered with ochreous-yellowish like the reniform-macula which is finely surrounded with blackish; in the apex a small brownish spot and in the distal margin dark dots. Hindwing yellowish white with a broad dark marginal band. Arizona.
- macroptica*. **Sch. macroptica** Sm. (48 i) resembles *oculata*, the yellow basal and marginal areas are much broader, the ochreous-brown reniform macula is much larger and transversely oval. South Arizona.
- aleucis*. **Sch. aleucis** Harv. (48 i) differs from the preceding ones in the presence of a broad median band being connected with a small postcellular spot and proximad touching the yellowish basal area at the costal margin and hind-margin. Hindwing white with a yellowish-red marginal band. Texas.
- chrysella*. **Sch. chrysella** Grt. (= *conchula* Fldr.) (48 i) is similar to *aleucis*, with more rust-yellow transverse bands, the median band not united with the reniform macula, in the rust-yellow marginal band, the proximal border of which is dentate, with small blackish spots and a white apical spot. Hindwing white, the marginal band copper-brown. Texas.
- ciliata*. **Sch. ciliata** Sm. (48 i). Here the rust-brown marginal colour is quite absent, the distal margin being only feebly tinted yellowish behind the dotted undulate line, the ochreous-reddish median band being the darkest and united with the reniform macula; at the apex a small brown spot. Hindwing white, at the margin brownish. New Mexico.
- lucilinea*. **Sch. lucilinea** Wkr. (48 i) is very different, large, on the forewing ochreous-brown with a purely white longitudinal band in the cell and behind it, the double purple grey postmedian line is filled with white, and before the centre of the hind-margin there is a purple grey spot. Hindwing white, at the margin brownish. Haiti.
- melliflua*. **Sch. melliflua** Dyar (48 k). Forewing loam-coloured brownish with a broad white costal-marginal stripe, basally and subterminally tinted with pink, with a white dot below the cell instead of the anterior transverse line, and a small dark spot at the cell-end. Hindwing towards the margin blackened. A small species from California.
- trifascia*. **Sch. trifascia** Hüb. (= *lineata* Wkr.) (48 k) is somewhat similar to *Hel. virescens*, dull olive-brown with 3 white oblique bands. Hindwing white, at the margin light olive-brown. Rocky Mountains, Alabama, Colorado.
- oleagina*. **Sch. oleagina** Morr. (48 k) is on the forewing light ochreous, the white transverse lines towards the base bordered with olive-brown, the subterminal area darker olive-grey as far as the almost straight white undulate line. Hindwing white, at the margin reddish-brown, enclosing a white spot. Colorado.
- gracilentia*. **Sch. gracilentia** Hbn. (48 k). Forewing dull reddish-brown strewn with grey, in the median area mostly of a purer light grey, with yellowish-white transverse lines, the anterior line above the median vein almost rectangularly bent. Hindwing light ochreous, at the margin brownish. Southern States, Texas.
- accessa*. **Sch. accessa** Sm. (48 k). Forewing silvery white, powdered with light olive-green, the transverse lines similar as in *trifascia*, but the anterior line with a long distal tooth in the cell as far as the oblong reniform macula which is surrounded by black. Hindwing white with a blackish marginal band and discal luna. Texas.
- sexplagiata*. **Sch. sexplagiata** Sm. (= *pyraloides* Streck.) (48 k) is similar to *gracilentia*, brownish-white, in the basal area red-brown, the subterminal area only in two spots at the costal margin and hind-margin, transverse lines white. Hindwing white with a dark discal luna and marginal band. Colorado.

Sch. tobias Sm. (48 l) forms the transition from the preceding species to *biundulata*; forewing dull olive with broad white transverse stripes, both at the costal margin and hind-margin somewhat widened, the anterior one towards the base sharply defined, distally washed out; the subterminal area is darkened at the costal margin and hind-margin; instead of the reniform macula there is, though not always, a small white luna. Hindwing whitish, towards the distal margin olive-yellowish. Arizona, in September.

Sch. biundulata Sm. (48 l) resembles *tobias*, the white transverse lines are narrower, more distinctly defined, on the averted sides scantily scaled blackish, the subterminal area is not darkened, but the marginal area is somewhat lighter; no reniform macula. From Colorado.

Sch. espea Sm. (48 l). Forewing pale greenish-yellow, powdered with olive, in the basal area whitish with white transverse lines, the anterior line distally shaded with olive, at the hind-margin broader, so that the proximal half of the discal area appears to be darkened; the narrow subterminal area being darkened by olive, by the contrast with the light marginal area, indicates the course of an undulate line. Hindwing diaphanous white with a moderately broad blackish marginal band. Described from a ♀ from Florida.

Sch. separata Grt. (48 l). Forewing white, powdered with olive greyish-brown, with white transverse lines bordered with blackish on the averted sides, the anterior line distally acute-angled; the black and white reniform macula is strangulated; the undulating line forming 3 bows touches the postmedian line above the centre. Hindwing white with a black discal luna, the marginal band interrupted by white. A larger species from Nevada.

Sch. acutilinea Grt. (48 l) is very similar to *separata*, but easily separable by denticulate transverse lines. Hindwing more extensively marked black. Colorado, Montana, Utah.

Sch. parmeliana Edw. Forewing greenish ochreous, in the basal area and subterminally olive-brown, the white transverse lines similar to those of *acutilinea*, but the anterior line not so acute-angled, in the lighter discal area with an olive-brown discal shadow darkening the reniform macula. Hindwing greyish-brown with a whitish discal band. Maryland.

Sch. nundina Drury (= *nigrireana* Hew.) (48 l) has a similarly marked subterminal area as the two preceding ones, but it is much lighter and more extensively white, in the centre of the cell with a black dot and with a black, strangulated reniform-macula containing a bluish-white lunula. Hindwing white with an olive discal luna and subterminal band. Central, Southern States and Central America.

Sch. arefacta Edw. (49 a). Forewing yellowish-white with light brown transverse bands, in the discal shadow an interrupted darker brown band. Hindwing yellowish-red with traces of a double median band. Florida.

Sch. coercita Grt. (49 a). Forewing on the white ground powdered with brownish ochreous, with white transverse lines bordered with darker brown on the averted sides, and with small grey maculae surrounded by brown, the reniform macula inwardly produced on the median; the broad white undulate line touches the postmedian line on the discal fold. Hindwing yellowish-white with a brownish median streak and marginal band. Arizona.

Sch. obliqua Sm. (49 a). Forewing white with pale olive brownish transverse bands and an oblique olive median shadow from the blackish reniform macula to the hind-margin. Hindwing white with a small olive discal spot and subterminal band. Arizona.

Sch. alensa Sm. has dull yellowish-white forewings with an olive-yellowish basal and subterminal area, the transverse lines only defined by the contrast of these darker areas with the white discal area which itself is interrupted by a median shadow which may become very broad towards the hind-margin; the reniform macula is composed of 2 blackish small spots connected by a line. Hindwing as in *obliqua*. Arizona.

Sch. cupes Grt. (= *crotchii* Edw., *navarra* Dyar) (49 a) is a differently and much more irregularly marked species recalling the palearctic *S. trifolii*. Forewing whitish ochreous, strewn with brown and with light veins, with light transverse lines bordered with brown and brownish, grey-centred maculae being finely surrounded by black; the undulating line with small black and light sagittiform spots. Hindwing yellowish-white with a brown discal spot and a light-spotted marginal band. From Washington and Oregon to Texas, Colorado, and California. — f. **deserticola** B. & McD. (49 a), a desert-form from Arizona and California, is much lighter, all the tints being brown in the type are replaced by dull yellowish ochreous ones, also the marginal band of the hindwing being paler.

Sch. velaris Grt. (= *ochreifascia* Sm.) (49 a). Forewing white, the antemedian and median band being broad, reddish-yellow, the postmedian line and undulating line being narrow, dentate, the space between them powdered with grey, in the upper marginal half with a darker reddish-yellow band, the reniform macula and a spot behind it deeper rust-brown. Hindwing reddish-yellow, with a darker marginal band. California.

Sch. lanul Streck. (49 a) is very similar to *velaris*, so that HAMPSON took it to be a synonym; forewing more intensely powdered with olive, the bands not so reddish, more brown, the reniform macula blackish. Hindwing paler yellow, the marginal band narrower. Texas. Only 2 specimens are known hitherto.

- argentifascia*. **Sch. argentifascia** B. & McD. (49 b). Forewing olive, powdered with cinnamon-brown, particularly subterminally and in the basal area, the proximal half of the discal area silvery white, the distal half olive-brown containing 2 small black reniform maculae; postmedian line and undulating line white. Hindwing whitish, towards the distal margin darkened. Arizona.
- illustra*. **Sch. illustra** Sm. (49 b). Forewing yellowish ochreous with scarcely darker transverse lines, the distal half of the discal area, the subterminal area, and the veins of the marginal area shaded with brownish ochreous; the posterior transverse line on the veins finely distally dentate, no undulating line; the reniform macula is a white streak edged with brown. The white hindwing shows a yellowish hue. Colorado.
- tertia*. **Sch. tertia** Grt. (49 b) shows in the basal half white forewings strewn with brown and lead-colour, the marginal half is brown with lead-coloured powdering, the anterior black transverse line is double, all the maculae are surrounded by blackish, the white postmedian line is distally spotted black; the white undulating line is dentate. Hindwing yellowish-white with a brownish discal spot and subterminal band. New Mexico.
- megarena*. — f. **megarena** Sm., from Texas and Utah, is lighter with pure white hindwings.
- albafascia*. **Sch. albafascia** Sm. (49 b) is on the forewing only white in the broad discal area, in the basal and marginal areas red-brown and strewn with bluish-grey, in the latter with white veins and with an indistinct undulating line; the transverse lines are black, and the maculae being centred with bluish-grey are surrounded by black, the reniform macula is situate in a feeble light reddish-brown band. Hindwing yellowish-white with a brownish-grey discal spot and marginal band. Utah, Colorado. — f. **erosa** Sm. is the race from Arizona, it is somewhat smaller, on the forewing basally and subterminally lighter, yellowish, the distal half of the median area being mostly hued with yellowish. The whitish hindwing exhibits a broader dark marginal band.
- brunnea*. **Sch. brunnea** B. & McD. (49 b) is a most variable species, on the forewing brown, mixed with yellowish ochreous and olive, basally and subterminally darker brown, strewn with bluish-grey, also in the distal half of the median area mostly more intensely powdered with brown, with a faded broad median shadow being the darkest as a costal-marginal spot above the quadrangular reniform macula; undulating line light with a dent above the centre extending to the postmedian line. Hindwing yellowish with a broad black marginal band and discal spot. Single specimens are all over powdered with brown, so that the whole marking is covered, others being of very contrasting colours, whilst others again are very pale, yellowish. From California.
- alba*. **Sch. alba** Sm. (49 b). Forewing yellowish white, basally and subterminally yellow and strewn with brown, the transverse lines broad brown, the posterior line divided into spots; from the dark brown reniform macula a yellowish median shadow extends to the hind-margin. Hindwing brownish with a feeble discal spot and marginal band. Arizona. — f. **brucei** Sm., from Colorado, is somewhat larger, lighter, monotonous, basally and subterminally more reddish, also the discal area powdered with brownish.
- diffusa*. **Sch. diffusa** Sm. (49 c) is quite light reddish-grey with hardly visible markings, the basal and subterminal areas being hardly darker, otherwise similar to the preceding ones. Colorado.
- walsinghami*. **Sch. walsinghami** Edw. (49 c). Forewing white, powdered with rusty brownish, basally and subterminally darker, the anterior transverse line below the cell acute-angular, the posterior line finely dentate; the reniform macula is a dark luna; fringes speckled white and red-brown. The white hindwing shows a faint reddish-brown hue. Oregon.
- unimacula*. **Sch. unimacula** Sm. (49 c) is similarly marked, of a purer silvery white, the basal area scarcely darkened, the reniform macula very characteristic, strangulated, and on the median inwardly produced, the end of which is white; from here a faint reddish-brown median shadow extends to the hind-margin. Hindwing white with a light reddish-brown discal luna and a white-spotted marginal band. Colorado.
- lynx*. **Sch. lynx** Guen. (49 c). Forewing olive ochreous-brown, the light transverse lines on the averted sides accompanied by broad red-brown bands, in the faint reddish-brown median shadow with the crescentiform blackish-brown reniform macula. Abdomen and hindwing orange, the latter with a large black discal luna and marginal band. Massachusetts to Florida and Texas.
- sordida*. **Sch. sordida** Sm. (49 c) is similar, smaller, more chocolate brownish, with a pink hue in the discal area, the base and an apical spot more yellowish, with more distinct white, dentate transverse lines. Hindwing more extensively black. Texas, Alabama.
- petulans*. **Sch. petulans** Edw. (49 c) differs from *sordida* in its smaller size, the paler, more yellowish colouring with an orange basal and subterminal tint. Hindwing much paler orange, the black colour very much reduced. Florida.
- ar*. **Sch. ar** Streck. Forewing light ochreous yellowish, in the basal, subterminal, and marginal areas brown, the white transverse lines rather indistinct, feebly dentate like the undulating line; the indistinct reniform macula is brown, the fringes are speckled brown. Hindwing yellowish with a brownish-grey discal spot and a very broad marginal band. Texas. Probably only a pale form of *sordida*.

Sch. tanena *Streck.* (49 c). Forewing olive yellowish, basally and subterminally yellowish-brown like *tanena*, the large quadrangular reniform macula; the transverse lines are whitish, the anterior line below the cell acute-angular. Hindwing black with a yellow base. Texas.

Sch. regia *Streck.* (49 d) has white forewings with a rosy red basal and subterminal area, the former *regia*, on the median acute-angular; in the light orange brownish median shadow with the faded reniform macular spot; marginal area yellowish-reddish like the hindwing, the latter at the distal margin darkened and partly hued with pink. Kansas, Texas, Colorado.

Sch. niveicosta *Sm.* (49 d). Forewing yellowish, with a white costal margin, only subterminally somewhat darker, the anterior transverse line is absent, the posterior line is indistinct lighter. Hindwing yellowish-white with a blackish discal spot and a white-spotted marginal band. South California.

Sch. gloriosa *Streck.* (49 d). Forewing light olive, basally and subterminally purple red with red-striped veins and a similar reniform macula; transverse lines white, particularly the posterior line distinctly dentate. Hindwing dingy white with a brownish discal spot and marginal band. Fringes white speckled with brown. Texas.

Sch. sanguinea *Geyer* (= *carmosina* *Neum.*) (49 d) is very similar to *gloriosa* (both may only be races of one species), the reniform macula is blackish or brown, the red veins on both sides bordered with whitish. Hindwing brown, fringes at the ends white. Texas, Florida.

Sch. terrifica *B. & McD.* (49 d) is likewise similar, but much lighter and more indistinctly marked, forewing yellowish white, basally and subterminally pale pink, the yellowish-white discal area traversed by an olive-brown median shadow containing the blackish reniform macula. Veins in the marginal area on both sides striped with white. Hindwing as in *gloriosa*. Colorado.

Sch. saturata *Grt.* (= *rubiginosa* *Streck.*) (49 d). Forewing ochreous red-brown, strewn with white, the white transverse lines on the averted sides bordered with a darker colour, the posterior line feebly dentate, the undulating line traceable. Hindwing yellowish red-brown, discal spot and distal margin darker. From Massachusetts to Florida, Texas, and California.

Sch. roseitincta *Harv.* (= *exaltata* *Edw.*) (49 d) is easily discernible from all the species by the pinkish carmine hindwing exhibiting a broad blackish-brown marginal band. Forewing dull olive-brown with indistinct transverse lines being bordered with pink on the averted sides. Texas, Colorado.

Sch. jaguarina *Guen.* (49 e) is marked almost the same as the common *marginata*, but it is larger and more yellow and easily separable by orange hindwings with a black discal spot and an orange-spotted marginal band. Georgia, Nebraska, Colorado, Kansas, Texas. — f. **demaculata** *Strd.* (= ab. 1 *Hmps.*) shows no discal spot on the hindwing, the marginal band being very indistinct.

Sch. arcigera *Guen.* (= ♀ *spraguei* *Grt.*) (49 c) is marked very much like *jaguarina*, but much darker red-brown, often suffused with carmine, in the discal area greyer. Abdomen and hindwing orange, the latter in the marginal half brownish-black. The ♀ is still much darker, the hindwing and abdomen being quite black. Canada, Eastern and Central States to New Mexico. — f. **ferricasta** *Sm.* (49 e) is somewhat lighter, the discal area contrastingly much lighter, the transverse lines broader. Arizona to Mexico.

Sch. limbalis *Grt.* (49 e) is on the forewing monotonously dark brown, feebly hued with carmine and strewn with grey, with one small whitish costal-marginal and hindmarginal spot each. Hindwing blackish-brown with whitish fringes. Kansas.

Sch. olivacea *Sm.* (49 e). Forewing olive grey, in the basal area more reddish-brown, with light transverse lines on the averted sides bordered with olive green; the distinct undulating line is greenish-grey, parallel with the margin. Hindwing brownish-black with whitish fringes. Texas, taken in October.

21. Genus: **Eupanychis** *Grt.*

Characterised by a developed proboscis, correct long-haired palpi, a small rounded frontal projection with a horny plate below it and in the ♂ with ciliated antennae. The short broad anterior tibiae inside exhibit a bent horny sting and a spine, outside a horny sting and 2 spines.

Type: *E. spinosae* *Guen.*

E. spinosae *Guen.* (= *hirtella* *Grt. & Rob.*) (49 e). Forewing light olive-brown with white transverse lines being broadly bordered with red-brown on the averted sides, and a red-brown costal-marginal spot above the reniform macula which is surrounded with black. Hindwing yellowish white with a large black discal spot and a light spotted marginal band. Canada, Eastern and Central States.

- camina.* **E. camina** Sm. is the most closely allied to *spinosae*, but much smaller, less marked and without any red-brown tints, greyish-brown, basally and subterminally powdered with black, the reniform macula large, oblong, black; the undulating line is indistinct, whitish grey, the marginal area behind it smoky. Described from a ♀ from New Hampshire.
- mexicana.* **E. mexicana** Hamps. (49 f). Forewing on the yellowish ochreous ground olive of various shades, powdered with brown or red-brown, with light transverse lines and grey-centred maculae surrounded with light; before the sharply dentate light undulating line darkened. Hindwing orange-yellow with faded dentate reddish subterminal and terminal bands. Mexico.
- crenilinea.* **E. crenilinea** Sm. (49 f) is on the forewing yellowish, marked with brownish ochreous, the darkest before the white dentate anterior transverse line, in a discal shadow and the reniform macula; the subterminal area is brownish, inwardly defined by the sharply dentate and distally black-edged postmedian line. Hindwing light reddish-yellow, towards the margin darkened with coppery red. Texas.

22. Genus: **Metopoplacis** Hmps.

Separable from the preceding genus by a much larger round frontal projection with a small rough elevation in the centre and a horny plate below it; the short palpi are erect. The thorax is only hairy and tuftless like the rough-haired base of the abdomen. The short anterior tibiae outside show a long bent horny sting and inside a short and a fine spine. Forewing below the apex feebly excised. Only 1 species:

Type: *M. olivata* Hmps.

- olivata.* **M. olivata** Hamps. (49 f). Forewing white with olive-green antemedian and median bands, the latter behind the cell confluent with an olive-brown spot; behind the dentate white postmedian line with an olive-green costal-marginal spot extending below the apex to the margin, and another one below the centre. Fringes white speckled with green. Hindwing white with a broad faded brown subterminal band. Brazil (Matto Grosso).

23. Genus: **Hemigrotella** B. & McD.

The only small species with comparatively long and narrow forewings has short, slanting, scaled palpi and a but feebly rounded frons. Thorax clad with smooth scales. Anterior tibiae with a single strong horny sting at the end, without spines.

Type: *H. argenteostriata* B. & McD.

- argenteostriata.* **H. argenteostriata** B. & McD. (49 f). Forewing ochreous with a silvery white costal-marginal streak and a broad long silvery spot from the base to the apex which is divided by 2 longitudinal stripes of the ground-colour into 3 silvery spots. Hindwing white, feebly smoky, in the ♀ darker. California.

24. Genus: **Grotella** Harv.

This difficult genus comprises to-day quite a number of small mostly white very similar species. Whereas in 1903 only two species were known, to-day the number has increased to 14. The short palpi with a porrect bare terminal joint; on the frons there is a large „ring-wall“ with an obliquely truncate, above excavated central projection in it. Anterior tibiae inside with a long curved horny sting and 2 slender spines, outside a shorter horny sting. Dr. BARNES and BENJAMIN published an excellent revision of this group.

Type: *G. septempunctata* Harv.

- septempunctata.* **G. septempunctata** Harv. (49 f) has pure white forewings with a silky gloss, the base of the costal margin is black, and there are 3 antemedian and 4 postmedian black dots. The white hindwing is occasionally apically brownish. Texas, Colorado.
- harveyi.* **G. harveyi** B. & Benj. (49 f) is likewise purely white, spotted as the preceding species, but the spots are thicker and more intense, besides with 2 small basal spots, one of which is occasionally also traceable in *septempunctata*. Hindwing more intensely darkened. The species is somewhat larger and occurs in Colorado.
- sampita.* **G. sampita** Barnes (49 f). Spotted as *harveyi*, but besides with a series of small black spots in the base of the fringes. Hindwing greyish-brown, basally whitish. Smaller than *harveyi*. From Arizona.

G. blanca Barnes (49 g). Pure white with similar spots as in *harveyi*, but whereas in the latter the *blanca*, antemedian spots are situate underneath each other and the central one is removed towards the base, all three are here in an oblique line; the postmedian row only contains 3 spots, another postcellular spot being distally removed. Hindwing white, apically smoky with a discal band of a brownish-grey colour. Arizona.

G. dis Grot. (49 g). Forewing white, the small spots arranged as in *blanca*, but mostly very small and *dis*, some being absent. Hindwing monotonously greyish-brown. Widely distributed from New Mexico, Arizona to Mexico.

G. parvipuncta B. & McD. (49 a). Like *dis*, but not pure white but yellowish-white, the black dots *parvipuncta*, quite indistinct or absent. Hindwing smoky grey. New Mexico.

G. stretchi B. & Benj. (49 a). Forewing yellowish-white with 3 diminutive black dots, an antemedian *stretchi*, one on the submedian fold, one at the cell-end, and a postmedian one likewise on the submedian fold. Hindwing smoky grey. California.

G. vagans B. & Benj. (49 g). Forewing white, feebly hued with yellowish-grey, the black dots mostly *vagans*, absent or, if present, arranged as in *parvipuncta*; base of fringes feebly darkened with greyish-brown. Hindwing dark greyish-brown. Nevada.

G. binda Barnes (49 g). Forewing white, feebly tinted yellowish, black costal-marginal spots at the *binda*, base, centre and subapically, then 4 instead of the antemedian line, one at the cell-end, a postmedian row of 7 to 9 small intense spots, and finally at the margin between the veins quadrangular black spots. Hindwing whitish, apically feebly brownish. A small species from Arizona and New Mexico.

G. tricolor (49 g) is pure white, similarly spotted as *binda*, but with a brown nebulous line in the *tricolor*, subterminal area and 8 or 9 black subterminal spots behind it, which may be partly connected like the postmedian ones. Hindwing brownish-grey. Arizona.

G. soror B. & McD. (49 g). Forewing yellowish-white, at the hind-margin all white, similarly spotted *soror*, as *binda*, but besides with a large brown apical spot with 2 diminutive brown strigiform spots before it and 2 small blackish-brown spots above the anal angle; fringes speckled brown. Hindwing greyish-brown with a broad darker marginal band. Arizona, described from 1 ♀.

G. grisescens B. & McD. (49 g). Forewing olive yellowish, in the lower half of the discal area brown. *grisescens*, Hindwing light smoky brown. The collar is contrastingly lemon-coloured. New Mexico.

G. olivacea B. & McD. (49 h) has olive-brown forewings with dark brown transverse lines, the *olivacea*, posterior line dentate behind the cell; the reniform macula is represented by a small light spot at the cell-end. Hindwing greyish-brown. New Mexico, Arizona.

G. citronella B. & McD. (49 h). Forewing lemon-coloured with black transverse lines which are *citronella*, more or less divided into dots. Hindwing greyish-brown. California.

25. Genus: **Neogrotella** B. u. Benj.

Like *Grotella*, but the central appendage in the ring-wall of the frons is beak-shaped, not obliquely truncate.

Type: *N. spauldingi* B. & McD.

N. confusa B. & Benj. (49 h). Forewing yellowish-white, black dots arranged exactly as in *G. parvipuncta*, but very diminutive or extinct. Hindwing greyish-brown with contrasting yellowish-white fringes. A larger species from Colorado.

N. spauldingi B. & McD. (49 h) has yellowish-white forewings with brownish-black transverse lines *spauldingi*, being mostly broken up into rows of dots. Hindwing smoky brown. Utah.

N. mcdunnoughi B. & Benj. (49 h). Ground-colour very variable, yellowish-white, olive, or blackish- *mcdunnoughi*, grey, with blackish transverse lines of the same course as in *spauldingi*, besides with an undulating line which mostly is shadow-like, in two points, but which may also be absent like the transverse lines; a reniform macula is occasionally represented by a small light spot; fringes speckled light or darker. Hindwing smoky brown or blackish. A smaller species from California.

26. Genus: **Canthylidia** Btlr.

This genus is also mentioned as *Heliothis* or *Melicleptria* and its only American representative is an insect distributed in nearly all the parts of the world excepting Australia. It differs structurally from *Grotella* chiefly only in the plain rounded frontal projection with a horny plate below it.

Type: *pallida* Btlr.

scutosa. **C. scutosa** Schiff. (= *nuchalis* Grt.) (49 h). This common species with yellowish, basally and subterminally olive-brown forewings and 3 large brown maculae has been dealt with in Vol. III, p. 248 and Vol. XI, p. 308 and also figured there. In America it occurs in Kansas, Montana, and Colorado.

27. Genus: **Timora** Wkr.

Proboscis developed, palpi short, porrect and below hairy; frons as in *Canthylidia*. The short and broad front tibiae exhibit at the end inside a long horny sting and outside a short one. Beside the great number of Indian and African species also 4 Americans have been described:

Type: *T. senegalensis* Guen.

julia. **T. julia** Grt. (= *grandis* Drc.) (49 h) has pinkish red forewings with a yellowish-white longitudinal band through the cell as far as the distal margin, and single narrow marginal stripes. Hindwing white. California, New Mexico, Arizona, Mexico.

lanceolata. **T. lanceolata** Wkr. (= *splendens* Drc., *imitata* Drc., *depicta* Swh.) (49 i) is broad purple pink at the costal margin and hind-margin, between them silvery white, often powdered with golden yellow. Hindwing white, more or less powdered with greyish-brown, with pink fringes. In Africa widely distributed, also reported from Costa Rica.

toralis. **T. toralis** Grt. (= *rosaria* Barnes) (49 i) was placed by GROTE as Micro to the genus *Pyrausta*, and described by BARNES as *Prothymia*; it has chrome-coloured forewings with a pink spot in the basal area and a pink subterminal band being broadly confluent with the pink fringes at the costal margin and hind-margin. Hindwing yellowish white. Arizona.

tessipta. **T. tessipta** Dyar (49 i) is probably allied to *toralis*, the forewing is yellowish-white with a broad pink subterminal band, a spot below the base of the cell and another small one in the lower half of the cell. Hindwing grey, towards the base lighter. From Mexico (Tehuacan), taken in September.

28. Genus: **Copablepharon** Hew.

Separated from all the allied genera by the entire absence of horny stings at the end of the anterior tibiae, the anterior tibiae being strongly spined like the middle and hind tibiae. The frons exhibits a somewhat obliquely rounded frontal projection. The ♂ antennae are serrate and set with ciliary tufts, the thorax is hairy without any scales.

Type: *C. absidum* Harv.

grandis. **C. grandis** Streck. (= *subflavidens* Grt.) (49 i) is unicoloured light sulphur-yellow, only occasionally with a postmedian row of vein-dots. Hindwing white, at the margin feebly yellowish, with single postmedian black vein-dots. Montana, Colorado.

viridispar-sa. **C. viridisparsa** Dod. (49 i) is very similar to *grandis*, but uniformly and intensely strewn with olive-green, before the invariably present postmedian row of black dots somewhat more densely and darker. Also the hindwing is darkened by olive irroration. California.

longipenne. **C. longipenne** Grt. (49 i) is of a somewhat more reddish yellow tint than *grandis*, the row of black vein-dots is removed very far towards the margin, more subterminal. Hindwing brownish-grey. Montana.

absidum. **C. absidum** Harv. (49 k) is a large ochreous species strewn with brownish, with brown-striped veins; along the two folds narrow lighter longitudinal stripes; the postmedian line is indicated by black vein-dots which may occasionally be connected by a dentate brownish line. 2 dots are mostly also at the cell-end. Hindwing white, towards the margin smoky. Oregon, Montana, Colorado, California.

sanctae-monicae. **C. sanctae-monicae** Dyar (49 k). Forewing light ochreous, 2 black vein-dots indicate the anterior transverse line, the 8 black dots of the posterior line are strong, oblong, at the lower angle of the cell there is a small heap of brownish-black scales. Hindwing dark brown, hind-margin and fringes whitish, with a postmedian row of black vein-streaks. California.

alba. **C. alba** Harv. (49 k) is a unicoloured pure white species without black dots, from Oregon, Colorado, and Montana.

Subfamily: **Erastrinae**.

This group is not quite uniform and complete, since a small part of the genera ranged here resemble the trifold preceding subfamilies, whereas the majority by the decidedly „quadrid“ veins of the hindwing (the fully developed middle radial branch rising near the lower cell-angle) is closely allied to the following groups, particularly to the gigantic family of the *Noctuinae*, or as they are now called: „*Erebinae*“. We find here mostly small or very small species with a frequently Geometrid-like habitus recalling that of the *Acidaliinae*; another type is represented by the great number of *Tarache*-like genera and species mostly loving the sun and inhabiting the steppes; the genuine *Tarache* are besides the largest representatives, nearly all of which exhibit on the white ground-colour spots varying from brown and lead-coloured to blue. The groups with a feeble middle radial branch are so closely allied to the *Amphipyryinae* that they are really very difficult to separate. The eyes are smooth, not ciliated, the tibiae without spines, but all the other characters so diverse and heterogeneous that not any other common feature is to be mentioned. Only biologically the little insects correspond in the larvae — though we know rather very little of the tropical species — exhibiting the four anterior ventral feet stunted, so that the walk also in the adult larva becomes Geometrid-like.

1. Genus: **Eupseudomorpha** Dyar.

The only species somewhat recalls the smaller forms of the *Agaristidae*. Head small, proboscis developed, the long palpi straightly porrect and below hairy; the frons exhibits a tricuspid horny projection, the most central point being the longest; the antennae are also in the ♀ bipectinate. The thorax is hairy, tuftless, the abdomen with a tuft on the first ring. On the forewing the second and third lowest subcostal branch anastomose behind the accessory cell.

E. brillians Neum. (49 k) is on the forewing black with white and orange-yellow spots on the forewing; *brillians*. the hindwing shows a bronze lustre with traces of an orange discal spot and an orange subterminal band. Only known from Texas.

2. Genus: **Cydosia** Westw.

A small number of species allied to the preceding species by the marking and colouring, though the wings are much longer and narrower; besides separated by the sealed not hairy thorax, the tuftless abdomen, and a large rounded frontal projection with a goblet-shaped central appendage and below it a bent horny plate being excised in front. The subcostal branches anastomosing in the preceding species are stalked here, often also the uppermost radial branch. The species are partly very similar.

C. submutata Wkr. (49 l). Purple black, the anterior body white, the patagia with golden yellow spots, *submutata*. anal apex orange. The forewing shows some white spots, 2 orange golden bands, and between them 2 copper-red spots; behind the cell there is no white spot. Hindwing purple black. Hayti.

C. nobilitella Cr. (= *histrion* Fabr., *jamaicensis* Cock., *westwoodi* Drc.) (49 l) is similar, more bluish-black, the white spots much larger, all the transverse bands equally coppery orange; the hindwing in the ♂ diaphanous white with a narrow black distal margin and apex, in the ♀ quite black, in and below the cell at most somewhat lighter whitish. Abdomen black, in the ♀ with an orange apex. In nearly all the West Indian islands (Jamaica, Cuba, Hayti, Bahamas, Antigua, Tobago, St. Lucia, St. Vincent, Grenadines, Barbados, Trinidad), besides known from Mexico, Colombia, Venezuela, Guiana, Brazil. — The larva is velvety black, with orange spots, and spines on the 3rd to 5th segments, farther behind finely hairy, the anterior ventral feet being absent. It lives on *Spigelia anthelmia* and pupates in the soil.

C. mimica Wkr. (46 l) likewise resembles the preceding ones, but it has smaller and more numerous *mimica*. white spots and is easily distinguished by narrow long white marginal streaks. Hindwing of ♀ quite black. From the Amazons.

C. imitella Stretch (49 l) is a North American species distinguished from *mimica* by its smaller size *imitella*. and white patagia lacking the golden orange spots. Instead of the white marginal streaks there are 3 white spots. Hindwing quite black with a purple blue lustre. Texas.

C. phaedra Drc. (49 l) differs from *imitella* in being much larger and in the spot behind the cell-end *phaedra*. being divided into 2 white spots. Mexico.

- rimata*. **C. rimata** *n. sp.* (49 l), from Southern Brazil (Rio Grande do Sul) is very similar to *mimica*, but easily discernible from it by the long marginal streaks being here very short, reduced to white marginal dots, whilst between them and the golden orange posterior transverse band there are besides 3 large white subterminal spots. Described from 2 ♂♂ and 1 ♀. Type in the Coll. DRAUDT.
- hyva*. **C. hyva** *Jones* differs from the allied species in 3 white basal spots, instead of the white spots below the cell with a white longitudinal stripe on the submedian fold, the small spot behind the reniform macula being diminutive, the coppery band following behind it is replaced by a small orange spot behind the lower cell-angle, above it with a broad white band as far as the costal margin and a white punctiform spot below it; the fringes are white, at the anal angle and above the centre spotted black. Hindwing lustrous green, the black fringes at the apex and below the centre spotted white. Brazil.
- primaeva*. **C. primaeva** *n. sp.* (49 l) most probably is to be considered as a further stage of development of *nobilitella*, in which the white colour may also be very extensive. Here the ground-colour is ivory with very fine black markings, veins, 3 transverse lines and the two maculae being fine black, the subcostal stalk deep coppery brown; coppery red scales occur besides as slight thickenings on the intersections of the postmedian line with the veins which are, in the place of the subterminal line, likewise very slightly thickened as spots. Hindwing blackish-brown with white fringes. Body ivory white, collar and patagia finely bordered with black, the abdomen with black rings. Anus deeper yellow. According to a couple from Matto Grosso. Type in the Coll. DRAUDT.
- punctistrigata*. **C. punctistriga** *Schs.* (49 m) in the hindmarginal portion of the forewing shows no white spots whatever, but they are reduced to a longitudinal row through the cell to the distal margin; coppery red scales are on the costal margin, besides on single small antemedian and postmedian spots near the folds. Hindwing blackish-brown with single small white scales. Brazil (Castro).
- aurivitta*. **C. aurivitta** *Grote & Rob.* (49 m) has no white spots whatever, but on the bluish-black ground only 2 coppery golden transverse bands and a discoidal spot. Texas.
- majuscula*. **C. majuscula** *H. Edw.* (49 m) is a very monotonously purple blackish-brown insect with a metallic gloss and golden yellow anal apex of the ♀. Georgia and Arizona.

3. Genus: **Metaxyllia** *Dyar.*

Very closely allied to the preceding genus, but with a plain rounded frontal projection without a central appendage, with a parted tuft on the metathorax and a small tuft on the first abdominal ring. But one species:

- metallicella*. **M. metallicella** *Dyar* (49 m). Forewing black with a white subterminal area expanded to the anal angle, containing 3 round black spots; one subbasal, anterior and posterior black transverse line each are rather indistinct, slightly undulating, a subterminal line lead-coloured; maculae black, between them in the discal area metallic blue scales; the long fringes are black-spotted. Hindwing dull black. Mexico (City; Cuernavaca).

4. Genus: **Gorgora** *Dyar.*

Separated from *Cydusia* by the presence of an accessory cell from which the subcostal branches rise, the lowest from its end, the two next stalked, the uppermost but one from its upper edge. The anterior tibiae exhibit outside at the end a short spine, the frons exhibits a large rough surface; the short-haired palpi only reach to the frons. But one species:

- morga*. **G. morga** *Dyar* (49 k). Black, with orange hair on the thoracal dorsum, on the palpi and femora. Forewing with a bronze-coloured green reflection, a large angular orange discal spot, and a broad, distally dentate marginal band. Hindwing of a duller black. Mexico (City).

5. Genus: **Acidaliodes** *Hmps.*

Distinguished by the stunted proboscis, erect scaled palpi, smooth frons, and scaled tuftless thorax; the abdomen shows a row of small tufts. Legs long and slender with long spurs. On the long narrow forewing the accessory cell is absent, the uppermost radial branch rises from below the upper cell-angle from which the lowest subcostal branch rises separately, the 4 upper branches all rising from a joint stalk; the middle radial of the hindwing is feeble. Quite a number of very diminutive, Geometrid-like species have been described.

- excisa*. **A. excisa** *Hmps.* (49 m). Forewing greyish-white, strewn with red-brown, excepting the costal margin, apex and distal margin red-brown and powdered with dark brown, with blackish, partly interrupted transverse lines,

the posterior line outside bordered with whitish. Hindwing likewise in the central area dusted with dark, with blackish faded transverse lines. Easily discernible by the angular and cut-out hindwings. Colombia.

A. zattu Schs. (49 m). Forewing pointed, slightly cut out below the apex, grey, strewn with brown, *zattu*. the light brown costal margin as far as the centre dark, from there to the apex white-spotted, with fine curved brownish transverse lines, the posterior line thicker, forming an outward angle right above the anal angle; along the distal margin a whitish nebulous stripe. Hindwing brown, at the distal margin dusted with grey, with fine black-scaled transverse lines. Costa-Rica.

A. truncata Hmps. (49 m) shows the forewing and hindwing somewhat cut out below the apex. Forewing *truncata*. whitish, tinted and strewn with brown, with fine blackish transverse lines being dotted deeper black, and a whitish discoidal spot; before the black marginal dots there is a whitish line. Hindwing the same and besides with a white subterminal line on both sides finely bordered with black. Panama.

A. umber Dyar (49 m) is closely allied to *truncata*, forewing brown, strewn with whitish, with almost *umber*. obliterated markings, only single small darker dots connected by feeble yellowish lines instead of the usual transverse lines, before the black marginal dots with a white line; hindwing with a feebly orange-tinted median band, in the greyer distal portion 2 fine blackish lines and a white marginal line. Panama.

A. mela Dyar (49 m) has shorter palpi and a feeble yellow proboscis, the narrow forewing is entirely *mela*. margined with a sharp apex, the two lower radial branches are stalked; forewing grey with a black, thrice interrupted costal margin, a small black discal spot and marginal dots, instead of the interior transverse line 3 red-brown dots, with 4 feeble brownish postmedian transverse lines. Hindwing with a black subbasal line, a brown postmedian line and 2 subterminal lines; the first abdominal ring is black, the rest grey. Panama.

A. enona Drc. (49 m). The orange forewing is dusted with red-brown in the costal half, with very feeble *enona*. lighter antemedian and postmedian transverse lines, and brownish subterminal streaks. Hindwing yellow with a red-brown basal spot and feeble faded orange median and subterminal bands. Mexico to Brazil.

A. flavipars Dyar (49 m) is light yellow on the forewing with a broad purple grey costal half, between *flavipars*. the two colours scaled orange. The small hindwing is yellow, at the base purple, then red and orange scales. From Panama.

A. celenna Drc. has white forewings dusted red-brown and dark brown in the costal-marginal area, *celenna*. with punctiform black transverse lines, the posterior line more red-brown, besides a small white discoidal luna; at the margin there are above black dots, and red-brown dots in the white area. Hindwing white with red-brown transverse lines, the posterior line interrupted with a small black spot at the anal margin. Expanse of wings: 18 mm. Guatemala, Panama.

A. atripuncta Hmps. (49 m). Forewing whitish, strewn and dusted with red-brown, costal area darker *atripuncta*. brown with feeble whitish transverse lines and discal dot with a black dot in front of it; the white subterminal line is inside bordered by faded black streaks, outside by black dots, at the anal angle there is a thicker black dot. Hindwing similarly coloured with a curved red-brown median line and a black anal-marginal dot, a white subterminal line with single black small dots behind it. Brazil.

A. infantilis Schs. (50 a) may belong to *lycaugesia* and is grey on body and wings, the latter traversed *infantilis*. by 4 pinkish-brown nebulous lines, in the anterior and posterior ones on the forewing there are single black scales accumulated; at the margin black dots. Costa-Rica.

A. lycaugesia Hmps. (50 a) exhibits on the light reddish brown forewing a feeble, very oblique, somewhat *lycaugesia*. dentate white posterior transverse line and a tiny white discoidal luna beside 2 black costal-marginal dots. Hindwing somewhat deeper red-brown with 2 feeble oblique red-brown antemedian lines and a whitish band between them, as well as a narrow white postmedian band which is analwards inside edged with black; in front of the black marginal dots a white line. Amazons.

A. costipuncta Hmps. is somewhat similar to *lycaugesia*, but it has besides small black spots in the *costipuncta*. middle and at the end of the cell, a faded brown median line extends from a black costal-marginal dot to the inner margin, the marginal half of the costal margin is spotted brown, behind a darker postmedian line dark irroration; the waved line is whitish, in the middle finely dentate. The similarly coloured hindwing shows an indistinct posterior transverse line outside bordered with whitish, as well as a subterminal row of whitish lunulae. Expanse of wings: 16 mm. Peru (Cuzco).

6. Genus: **Araeoptera** Hmps.

Chiefly distinguished from *Acidalioides* by all the 5 subcostal branches having a joint stalk, and by the well developed proboscis. Abdomen only on the last rings with very short small tufts. Most of the species are Indian (cf. Vol. XI), but also a few Tropical American species have been described, which are externally very similar to the preceding genus.

acidalica. **A. acidalica** *Hmps.* (50 a). Forewing light reddish-brown with black costal-marginal dots, with a darker oblique median line, a whitish postmedian line inside shaded with red-brown, and feeble red-brown subterminal shadows. The similarly coloured hindwing exhibits, like the forewing, a black central dot and the same lines and shadowy markings. Known from Jamaica.

elam. **A. elam** *Schs.* (50 a), originally described as *Acidalioides* and somewhat similar to *truncata*, belongs to this genus. Forewing slightly cut out below the apex, grey with a white costal margin spotted dark brown, with whitish faded antemedian and postmedian transverse bands, the anterior one inside bordered with darker grey, and with a white undulate line inside shaded with darker grey; distal margin tinted reddish-yellow, with a black streak above the anal angle. Hindwing light reddish-brown, at the distal margin darker, in the middle and at the anal margin before the whitish undulate line strewn with blackish-brown. Costa-Rica.

betie. **A. betie** *Dyar* (50 a). Forewing with a rounded margin which projects somewhat pointedly at the apex and in the centre, white, scantily strewn with brown, with a dark brown discoidal dot and a shortened band before the anal angle. The white hindwing exhibits a produced apex and a median band and two subterminal ones formed of dark brown scales. Panama.

wilhelmina. **A. wilhelmina** *Dyar* (50 a) exhibits on the distal margins of both wings two concave indentations each; forewing white with 3 very feeble fine transverse lines proceeding from black costal-marginal dots, and a broad blackish, twice interrupted subterminal shadow and a black discoidal dot; a black marginal line only occurs in the indentations. Hindwing the same, though much more feebly marked. Mexico (Tabasco).

7. Genus: **Dymba** *Dyar*.

Distinguished from the preceding genus by somewhat longer palpi the middle joint of which is towards the end thick and loosely scaled; no tufts on the scaled body. On the forewing the two lower radial branches are stalked, the upper branch rises from below the upper cell-angle; the 4 lower subcostal branches are stalked, the uppermost being separate. Only 1 species:

coryphata. **D. coryphata** *Dyar* (50 a). Anterior body lilac grey, abdomen white with small black dorsal spots. The long pointed forewing is white, the basal area dark purple with deep brown subbasal and anterior transverse bands; central area strewn with brown and black excepting a white cellular spot with an oblique black line behind it; posterior transverse line indicated by a black costal-marginal band; apex broad white. On the white hindwing black irroration forms 4 more or less interrupted transverse lines. Panama.

8. Genus: **Sigela** *Hulst.*

This genus being also known as *Pseudocraspedia* *Hmps.* has more slender and longer palpi which are more scantily scaled, the abdomen exhibits small feeble tufts. On the long narrow forewing the upper median branch is stalked with the lower radial branch, the uppermost rising from the upper cell-angle; subcostal branches as in *Dymba*; on the hindwing the middle radial is feeble.

leucozona. **S. leucozona** *Hmps.* (50 a). Forewing blackish-brown, mixed with white, especially at the costal margin, apex and distal margin, the costal margin being streaked black and white in the marginal half, the white transverse lines are very oblique, the posterior line is inside shaded with black, between both there is an oblique blackish median line; a whitish subterminal line is only visible in the lower half. Hindwing very similar with a broad white median band. Panama to Colombia.

sodis. **S. sodis** *Dyar* (50 a). Forewing greyish-white with small black costal-marginal spots, with a curved, somewhat lighter whitish postmedian band and, before the anal angle, with a brown shortened oblique band. Hindwing greyish-white, the base and 2 oblique bands behind it grey; marginal area broad grey with a white subterminal line forming two bows. Panama.

holopolia. **S. holopolia** *Dyar* (50 a). Dark grey with a straight oblique line in the middle and a finer one behind it, which are somewhat divergent towards the costal margin; a subterminal shadow slightly widens analwards. Hindwing with a straight brown median line, behind it a fine undulating line behind which a straight line and a broad dark marginal line follow. Panama.

mathetes. **S. mathetes** *Dyar* (50 a). Forewing light grey with a narrow straight oblique line in the centre and a dark brown irregular macular band near the margin. Hindwing the same, but instead of the macular band there are 3 dark lines close together, the interior one being narrow, the two exterior ones broad. Panama.

eubleptica. **S. eubleptica** *Schs.* (50 a) is allied to *leucozona*. Forewing blackish grey with a yellowish costal margin and apex, and a very oblique black line from the base of the inner margin towards the upper third of the distal

margin; from the centre of the inner margin a white line extends to the apex. Hindwing dark grey with a black antemedian band rectilinearly bordering on the broad white median band. From Costa-Rica.

S. ormenis *Schs.* (50 a). Forewing Isabel-coloured, at the costal margin brown, the darkest in the apical half, both the transverse lines marked by black scales, at the cross-vein a black dot, near the anal angle with a brown inner-marginal shadow. Hindwing whitish, dusted with light greyish-brown. Cayenne. *ormenis.*

S. basipunctaria *Wkr.* (= *melanistieta* *Hmps.*) (50 b). Forewing light reddish-brown with black costal-marginal dots near the base and before the middle, and a dot at the cell-end as well as antemedianly on the submedian fold; the posterior transverse line is feeble, red-brown, the light undulating subterminal line is on both sides bordered with red-brown, behind it intense black marginal dots. Hindwing with the same colouring and marking. Known from Florida and St. Vincent. *basipunctaria.*

S. penumbra *Hulst.* is very similar to *basipunctaria*, of a darker and more monotonous colouring and much feebler marking, the marginal dots being almost extinct. Florida. *penumbra.*

9. Genus: **Lycaugesia** *Hamps.*

Like the preceding genus, but with a stunted proboscis; on the forewing only the 3 middle subcostal branches are stalked, the upper median branch being not stalked and rising before the lower cell-angle; the middle radial branch of the hindwing is feeble. The exterior of these small Noctuids is the same as in the preceding genera. Also of this genus there are a few Indian species known beside the Americans (cf. Vol. XI).

L. fuscifascia *Dogn.* (50 b) is easily recognisable, forewing reddish-yellow with a grey longitudinal band through the cell to the margin right below the apex, with red scales on the edges, also the costal and inner margin in the middle with red scales. Hindwing with a broad brownish-grey median band. French Guiana. *fuscifascia.*

L. flavimargo *Hmps.* (50 b). Forewing whitish, dusted and strewn with red-brown, in the interior and marginal areas more yellow, the transverse lines indicated by single black dots, the posterior line curved; at the cell-end there is a small whitish luna and before the margin there are single small dark spots. Hindwing at the base red-brown, in the central area reddish pink, especially towards the inner margin strewn with black, with a faded dark median band. Marginal area yellow with a small blackish subterminal spot. Brazil (Amazons). *flavimargo.*

L. teneralis *Wkr.* (50 b). Forewing yellowish-white, at the costal margin and in the cell strewn with purple grey, with broad faded reddish-yellow transverse lines, the anterior line being double and a similar spot at the cell-end; marginal area likewise reddish-yellow with a whitish undulating line. Hindwing similarly coloured and marked, behind the middle dusted with purple grey, enclosing the dark posterior transverse line. Honduras. *teneralis.*

L. gratificula *Dyar* (50 b) is similar to *teneralis*, smaller, light yellow, at the costal margin and distal margin with a purple tint, with a darker discal spot and a feeble white angular subterminal line. Hindwing purple grey with a light yellow antemedian band, in the marginal area light red-brown. Panama. *gratificula.*

L. semiblanda *Dyar* (50 b) chiefly differs from *gratificula* in the presence of a broad grey costal-marginal shadow on the forewing, shading also half the discal spot, and a similar distal-marginal shadow. Panama. *semiblanda.*

L. postnigrescens *Dyar* (50 b) has light violettish brown forewings with single dots and streaks instead of the usual transverse lines and a very prominent black subapical stripe. The hindwing shows the same ground-colour with thick irregular nebulous spots, so that only the base, an inner-marginal spot and one at the distal margin remain light. Panama. *postnigrescens.*

L. perpurpura *Dyar* (50 b). Wings pinkish-purple with ochreous fringes, on the forewing with a dark discal spot and a white notched subterminal line, on the hindwing with 2 curved, deep purple transverse lines, both the wings with dark marginal spots being more prominent on the hindwing. Panama. *perpurpura.*

L. hemipennis *Dyar* (50 b). Forewing very long and narrow, dark grey, with a white interior transverse line which is only distinct in the lower half, a white discoidal streak with a white undulate line from there to the inner margin, and a subterminal white zigzag-line. The very small hindwing is light yellow with long whitish fringe. Panama. *hemipennis.*

L. rubripicta *Hmps.* (50 b). The whitish ground is strewn with a lighter and darker red-brown, the marginal area is yellowish with fine blackish transverse lines partly broken up into dots, and a white oblique discal streak on each side bordered with black, before it a red-brown cellular spot; the dentate light subterminal line is on both sides bordered by dark. The whitish hindwing is suffused with red in the discal and marginal areas and strewn with black, otherwise marked like the forewing. Panama. *rubripicta.*

L. hatita *Schs.* (50 b) is allied to *rubripicta*, with a red-brown, basad more yellow forewing, with a white costal margin and apex, the dark anterior transverse line only inside bordered with white, a white

transverse line crosses the cell-end; a dentate white subterminal line is only visible at the anal angle. Hindwing ochreous, brown strewing forms a broad subterminal shadow, behind it the marginal area is purer white; at the cell-end a white spot on both sides bordered with dark. Costa-Rica.

- monostella*. **L. monostella** Dyar (50 c). Forewing purple grey with 3 yellow spots strewn with red, one in the basal third of the inner margin, one at the cell-end, and a subterminal one, at the costal margin and corresponding to the situation of the anterior transverse line black dots. Hindwing with a small yellow and red discal spot, adjoining to it a blackish median line, the exterior transverse line only marked by single small black scales. Panama.
- fuscicosta*. **L. fuscicosta** Hmps. (50 c) is reddish yellowish-brown on the forewing, at the costal margin down to the discal fold blackish-brown, strewn with purple grey, with traces of curved brown transverse lines and of a light dentate subterminal line. Hindwing somewhat more intensely strewn with red-brown, similarly marked as the forewing. Panama.
- melasoma*. **L. melasoma** Hmps. (50 c) is distinguished by the abdomen being black towards the end. Forewing light red-brown with single black dots instead of the transverse lines, a black streak on the discal fold behind the cell, and a black subapical streak; black marginal dots are very distinct. The similarly coloured hindwing shows traces of red-brown median and postmedian lines. Panama.
- pseudura*. **L. pseudura** Dyar (50 c) resembles *hypoazonata* in its shape and colour. Forewing light brown with purple, not very prominent markings, a dark basal spot, rather indistinct transverse lines, behind the exterior line the colour is somewhat lighter, the line itself in the middle very much distally curved. Hindwing feebly marked reddish-yellow, with 2 purple spots at the anal margin, the upper one more like a shortened band, the lower one pointedly projecting into the fringe. Panama.
- hypoazonata*. **L. hypoazonata** Hmps. (50 c). Forewing light red-brown, especially towards the costal margin strewn with purple grey, instead of the transverse lines with single black dots, and with a light discal streak behind which there is a blackish small wedge, light traces of the posterior transverse line; behind the feeble light subterminal line there are intense black marginal dots. Hindwing purple grey, dusted with brown like the light undulate line which is scaled dark on both sides. Panama to the Amazons.
- homogramma*. **L. homogramma** Schs. (50 c) shows brownish straw-coloured forewings strewn with purple, with a large round purple grey reniform macula from where a purple oblique stripe extends into the apex which is shaded with purple like the distal margin; the anterior transverse line is marked by 3 black dots. Hindwing crossed by straight transverse bands, a double median one, a reddish shaded one behind it, and a brown one right before the distal margin; black marginal dots on both wings distinct. Costa-Rica.
- semiclara*. **L. semiclara** Dyar (50 c) is similar, forewing straw-coloured, in the costal half strewn with brownish, with a round discal purple spot which is connected with the apex by a stripe; distal margin shaded with brownish. Hindwing only in the basal third straw-coloured, outside lilac grey; strewn darker in the shape of transverse lines, in the yellow portion crossed by a red line. Panama.
- microzale*. **L. microzale** Dyar (50 c). Forewing reddish-brown, in the costal third dark grey and a black prominent discal dot. Hindwing darker brown with fine red undulate lines and one black dot each at the apex and anal margin, and with a black streak in the interior marginal half. Panama.
- calochroa*. **L. calochroa** Dyar (50 c) has yellow forewings strewn with orange, with a pinkish purple discal spot enclosing a deep purple central dot; at the base of the costal margin there is likewise a small purple spot. Hindwing with a broad curved median band of purple pink colour, edged by black-scaled lines. Panama.
- epistigma*. **L. epistigma** Dyar (50 c). Forewing flesh-coloured, dusted with grey, with red dots instead of the interior transverse line and at the base, as well as a large black discal spot. Hindwing with feeble red undulating transverse bands and black marginal dots as on the forewing. Panama.
- stigmaleuca*. **L. stigmaleuca** Dyar (50 d) is light grey, in the disc of the forewing yellowish with feeble fine transverse lines, at the apex shaded with dark in the shape of longitudinal stripes; the white discal spot is very distinct. Hindwing with a double red-brown median line filled with grey, behind it a white line. Marginal line black. Panama.

10. Genus: **Araeopterella** Dyar.

Same neuration as in *Araeoptera*, but the uppermost subcostal branch rises from the cell; the erect palpi reach to the vertex, the middle and last joints are uniformly scaled, the proboscis is fully developed, thorax and abdomen tuftless. Only 1 species:

- miscidisce*. **A. miscidisce** Dyar (50 d). Forewing light grey, towards the costal margin whitish, in the marginal area olive grey with a white subterminal band and black marginal dots inwardly pupilled white; no transverse

lines excepting a whitish curved postdiscal patch; in the centre of the costal margin a black dot. Hindwing towards the margin light brown with a faded white discal spot and white-scaled median and postmedian transverse lines, without the black marginal dots. Panama.

11. Genus: **Anablemma** Schs.

Proboscis stunted, but traceable, the middle joint of the palp reaching to the vertex and covered with broad round scales, last joint short; on the frons a small hair-tuft, on the abdomen a small basal tuft. Forewing narrow with a pointedly produced apex, the distal margin angular in the middle; subcostal veins as in the preceding genus, the uppermost radial branch from below the upper cell-angle. On the hindwing the middle radial is fully developed and rises below the middle, the costal branch anastomoses almost with the centre of the cell.

A. lebana Schs. (50 d) has lilac grey forewings scantily strewn with black, the costal half dusted with *lebana* brown, with fine brown transverse lines being edged with grey at the costal margin, and a blackish-brown inner-marginal spot behind the exterior line; a brown marginal shadow is darkest at the apex. Hindwing grey, towards the margin brownish. Costa-Rica, Panama.

A. ziha Schs. (50 d). Forewing lilac with an olive brown costal margin and transverse lines, the latter *ziha*, bordered with a lighter colour. Hindwing reddish-brown. Costa-Rica, Panama.

A. palliola Dyar (50 d) is allied with *ziha*. Forewing slightly angular below the apex, brownish straw-*palliola*, coloured, costal and distal margins strewn with dark, with a dark inner-marginal spot near the anal angle; transverse lines hardly traceable. Hindwing yellowish with a dark discal dot. Panama.

A. harsha Schs. (50 d) exhibits an almost falciform apex of the forewing, the costal half of the forewing *harsha*, is olive brown, below it lilac, strewn with brown, with fine olive brown transverse lines on both sides bordered with lilac, the posterior line undulate, at the margin with small dark internerval spots, the largest at the apex and anal angle. Hindwing whitish, at the distal margin narrow greyish-brown. Costa-Rica.

A. necoda Schs. (50 d). Forewing reddish-yellow, costal margin shaded with olive brown, with 2 brown, *necoda*, white-edged oblique streaks in and behind the middle of the costal margin, a fine brown median line and a punctiform postmedian line, ending with a larger spot at the inner margin; a brownish subterminal shadow is rather indistinct. Hindwing reddish yellow with a fine postmedian line which is thickened towards the anal margin. Costa-Rica.

A. diagramma Hmps. Distal margin of forewing angled on the uppermost radial branch, and the *diagramma*, branches of the hindwing rising from the cell-angles are stalked in pairs. Forewing greyish-white, dusted with red-brown and striated brown, with oblique blackish transverse lines, the anterior line only present at the costal margin, the posterior line only at the inner margin, distal margin in the upper half spotted black. Hindwing coloured the same, with a marginal row of dark dots. A rather large species from Brazil. Expanse of wings: 28 mm.

12. Genus: **Charoblemma** Dyar.

Proboscis developed, palpi obliquely rising, the middle joint above hairy, thorax and abdomen tuftless. On the forewing the 4 upper subcostal branches are stalked, the lowest being separate, hindwing as in *Anablemma*, though the upper radial and subcostal branches are not stalked, the costal branch anastomoses near the base with the cell. Only 2 species:

Ch. unilinea Dyar (50 d). Forewing straw-coloured, with a broad blackish-brown oblique band from *unilinea*, the apex to the basal third of the inner margin, behind it tinted with flesh-colour, at the margin brownish-black. Hindwing straw-coloured, towards the margin flesh-coloured. Panama.

Ch. opisthomela Dyar (50 d) is straw-coloured, on the forewing with a purple tint with a dull olive *opisthomela*, brownish band from the costal margin near the apex to behind the centre of the inner margin, enclosing a row of black dots. Hindwing pale straw-coloured; on the metathorax a black spot. Panama.

13. Genus: **Microblemma** Hmps.

Similar to the preceding genus, but with a flat tuft on the metathorax. Subcostal neuration as in *Aracopterella* and *Anablemma*, hindwing as in the latter genus.

M. discipuncta Hmps. (50 d) has yellowish-brown forewings strewn with a darker colour, with traces *discipuncta*, of undulate transverse lines, black dots in the centre and at the end of the cell, the latter being large and round, and with a faded blackish subterminal line. Hindwing dark brownish-grey. Panama.

M. ulopus Dyar (50 e). Forewing yellowish-brown, strewn with a darker colour, the most densely so *ulopus*, at the margin, with a large round brown discal spot; costal margin, marginal dots and traces of two curved transverse lines dark brown. Hindwing brownish-grey, in the disc lighter. Posterior tibiae above with a long dense tuft of scales. Panama. It may be the male of *discipuncta*.

14. Genus: **Gelenipsa** Dyar.

Distinguished from the preceding genus by the stunted proboscis and more slender palpi, long-combed male antennae, shorter and broad forewings with a curved costal margin and long cell; neuration as in *Microblemma*, but the middle subcostal branch is absent; on the hindwing the upper median branch and the lowest radial branch are separated.

psychodidarum. **G. psychodidarum** Dyar (50 e). Forewing grey, strewn with brown and black, with a copper-red distal-marginal spot; lower half of central area red-brown as far as the dentate subterminal line, behind it greyish green with 2 black spots therein; towards the base there are yet 2 green spots at the costal and inner margins. Hindwing brownish-grey, towards the margin darker. Panama.

15. Genus: **Proroblemma** Hmps.

Proboscis developed, palpi rather long with a short porrect terminal joint, the middle joint above, especially towards the end, covered with long hairs; body scaled and tuftless as in the allied genera. On the forewing only the 3 middle subcostal branches are stalked, the lowest comes from the upper cell-angle, the upper radial branch from below it; on the hindwing the middle radial is well developed, the costal branch anastomoses with the centre of the upper edge of the cell.

stictopteris. **P. stictopteris** Hmps. (50 c) has a light purple forewing scantily strewn with black, in the postmedian area excepting the costal portion deeper red, with a black dot in the centre of the cell; posterior transverse line and undulate line rather indistinct, blackish brown, at the margin there are black dots. Hindwing purple brown with light red fringe, in the male more yellowish-white, only at the margin reddish; the ♂ shows a large black reniform macula. Brazil (Amazons, Espiritu Santo).

testa. **P. testa** B. & McD. (50 e), the only North-American representative, has brownish forewings distally shaded by purple, with very indistinct markings, the maculae punctiform, the feeble posterior transverse line light purple, only behind the cell darkened black; the feeble undulate line is likewise purple reddish. Hindwing whitish, outside smoky. Florida.

polystriga. **P. polystriga** Hmps. (50 e) is purple pink on the forewing, densely strewn with brown, intermixed with single silvery scales, with a light discal spot and dark transverse lines behind the middle, the postmedian line outside bordered with whitish, the subterminal line double. Hindwing light brown, with black marginal dots as on forewing. Western Colombia.

rosea. **P. rosea** Schs. (50 e). Forewing pinkish lilac, dusted with brown and transversely striated in violettish-brown, the most densely so in the postmedian area, with a black dot in the centre of the cell and a pink discoidal streak; posterior transverse line pink, apex shaded with pink. Hindwing yellowish white with dark marginal dots. Costa-Rica.

philogonia. **P. philogonia** Dyar (50 e). The long pointed forewing exhibits in the centre of the distal margin and of the inner margin one strong angle each, the ♂ a tuft of yellow scent-scales at the anal margin of the hindwing. Forewing of ♂ straw-coloured, of ♀ pink, densely strewn with grey, with a white exterior transverse line and 2 black cellular dots. Hindwing yellowish, in the ♀ more brownish-grey. Panama.

cupreispila. **P. cupreispila** Dyar (50 e). Forewing broad triangular with a convex distal margin, purple, analwards copper-red, finely strewn with a darker tint, with a feeble, curved dark postmedian line and a small discal dot. Hindwing brownish-grey with a rather indistinct central dot and median band. Panama.

porphyrea. **P. porphyrea** Dyar (50 e). Forewing brilliantly purple pink, behind the centre of the costal margin with a brown shadow, a dark postmedian line and a small round discal spot; fringe brown. Hindwing brownish grey. Panama.

16. Genus: **Trogoblemma** Hmps.

Allied to the preceding genus from which it differs in much longer, straightly porrect palpi, the middle joint of which is very thickly scaled above, on being looked at from the side in a triangular shape with a lower base; the male antennae are long-ciliated. Forewing with the same neuration as in *Proroblemma*, but with an almost falciform apex below which the distal margin is deeply cut out.

acutalis. **T. acutalis** Schs. (50 e). Forewing reddish-brown, scantily strewn with black, with a black central dot of the cell and an elliptical reniform macula; median line very faintly traceable, behind it an oblique postmedian line and a curved subterminal line; fringe deep red-brown. Hindwing white with a small brownish discal spot. Brazil (S. Paulo).

modesta. **T. modesta** Schs. (50 f). Forewing brown, at the costal and inner margins shaded with lilac, scantily strewn with black in the basal and costal-marginal areas, with one black dot each in the middle and at the end of the cell; posterior transverse line whitish, dentate, more broken up in dots. Hindwing whitish with a small discal spot and a line of dark dots behind it. Mexico, Costa-Rica.

T. sericata Schs. (50 f) has lilac brown forewings with long light transverse striae, at the costal and inner margins scantily strewn with black, with 2 black dots in the middle and at the end of the cell, and with a light posterior transverse line. Hindwing whitish, at the margin brownish. Costa-Rica.

T. lucens Schs. (50 f). Forewing light brown, in the marginal third lilac grey with a silken lustre, scantily strewn with black, with the same black cellular dots as in *sericata*, and a finely dentate posterior transverse line which ends sealed blackish-brown in the middle of the inner margin. Hindwing white with yellow fringe and anal margin and with small brownish-grey spots in the upper marginal half. Costa-Rica.

T. cacodoxica Dyar (50 f) is very similar to *modesta* and red-brown on the forewing, strewn with purple and also red, the markings the same though very indistinct, with but one black discal dot. Chiefly distinguished by the brownish-grey hindwing. Mexico, Costa-Rica.

17. Genus: **Eublemma** Hbn.

This genus of a cosmopolitan range has already been dealt with at large in Vol. III, p. 261, and Vol. XI. It suffices here to say that the great number of particularly Indo-Australian species are also represented in America. Very closely allied to the preceding genera and characterized by the strongly developed middle radial on the hindwing distinctly rising below the middle of the cross-vein, erect moderately long palpi which are above not more intensely haired or sealed, a fully developed proboscis, a tuftless thorax and abdomen, and the subcostal neurulation on the forewing as in the preceding genera.

E. minima Guën. (= pennula Fldr., carmelita Morr.) (50 f). The white forewing with a yellowish tint, at the costal margin towards the base brownish, with a brown, inwardly faded median band and a white postmedian line; at the cell-end 2 black dots; undulate line white, at the costal margin expanded like a spot with a black dot in it, outside with single black dots and a larger one above the anal angle. Hindwing white, at the margin brownish. From Texas and California to Argentina, also in South Africa. — f. **pallida** Schs. is more monotonous, grey in the ground-colour. — The larva is brown without markings, somewhat granulated, with a black head, neck-shield and anal shield; it lives on Gnaphalium.

E. cinnamomea H.-Schäff. (= laphyra Drc., rosesens Hmps.) (50 f). On the yellowish-white ground, excepting the costal-marginal and distal-marginal areas, dusted with red-brown, in the discal area more with a purple grey, with antemedian, median and postmedian red-brown transverse lines, outside bordered with yellowish, behind the exterior line an oblique brown costal-marginal shadow. Hindwing yellowish-white, at the margin more reddish brown. Very widely distributed from Mexico to Uruguay. — ab. **subcinnamomea** Strd. (= ab. 1. Hmps.) exhibits a more intense yellow tint on the forewing, the basal area being somewhat flesh-coloured. — ab. **margaritae** Berg is more intensely strewn blackish-brown on body and wings.

E. irresoluta Dyar (50 f) is very similar to the preceding species, but twice its size and of a much lighter colouring. Forewing yellowish, dusted with light red, in the costal area light, with straight light parallel transverse lines and a small grey reniform macula. Hindwing yellowish-white, outside somewhat brownish. Mexico (Orizaba).

E. carterotata Dyar (50 f). Forewing in the costal portion yellow, below it tinted violet and purple, in the marginal area fiery red, traversed by a purple subterminal shadow; the interior transverse line is but very feebly marked, the exterior line oblique, whitish. Hindwing yellowish, outside with a pink hue. Costa-Rica.

E. obliqualis Fbr. (= flammieincta Wkr., pallescens H.-S., stalii Wlgr., laphyra Drc. part.) (50 f) is yellowish white on the forewing, more or less dusted with brownish, with an oblique, rather broad light oblique line from the apex to the centre of the inner margin, inside often edged with purple grey, a fine light postmedian line above it, which however is more divergent towards the anal angle. Hindwing yellowish-white, at the margin reddish-brown. Distributed from Alabama and Texas to Peru. — f. **patruelis** Grt. exhibits also yet an oblique anterior transverse line. — f. **patula** Morr. is lighter, in the marginal area hardly with a reddish hue. — f. **luteipennis** Strd. (= ab. 3. Hmps.) is more intensely yellow, less hued with red-brown, with indistinct markings, but more intense black marginal dots. — f. **brunneoochracea** Strd. (= ab. 4. Hmps.) (50 f) is uniformly dusted with ochreous brown, from Mexico.

E. flavia Hmps. (50 g) is a small monotonously light yellow insect, only at the costal margin and in the distal-marginal area with a light brownish tint, and with a marginal row of black dots. Hindwing light yellow, at the margin feebly brownish. From Panama.

18. Genus: **Phobolosia** Dyar.

Its position is somewhat questionable, as the typical species was at first considered to be a *Nolida*, then an *Amphipyrrina*. Proboscis developed, palpi obliquely erect, the middle joint below covered with projecting hairs; on the metathorax a small loose tuft of frequently metallic scales. In the neurulation it differs from *Eublemma* in all the 4 lower subcostal branches of the forewing rising on a stalk, only the uppermost being free. Very small species similar to *Nolidae*, often decorated with metallic colours.

- anfracta*. **Ph. anfracta** *H.-Edw.* (= *reincarnata* *Dyar*) (50 g). Forewing brownish-yellow, feebly strewn with a darker colour, the transverse lines edged with whitish, the posterior one dentate, in the discal area below the cell with a large blackish spot; the whitish dentate undulate line is inside shaded with ochreous brown. The whitish hindwing is strewn with brown. Utah, Texas, California, Arizona.
- medialis*. **Ph. medialis** *Hmps.* has white forewings striated in dark brown, in the basal costal-marginal area, the discal and apical areas darkest, with blackish-brown transverse lines bordered with white, the interior one on both sides, and with a blackish-brown discal spot; before the white undulate line there is a brown shadow, at the costal margin broad. Hindwing white, towards the inner margin reddish-brown with traces of a discal spot and a postmedian line. Expanse of wings: 20 mm. West Colombia.
- atrifrons*. **Ph. atrifrons** *Schs.* (50 g) is recognizable by its jet-black frons; forewing ochreous brown, with transverse striae, a small narrow white oblique reniform macula and a fine white posterior transverse line which is bordered with dark brown inside at the inner margin; above the anal angle a white patch; before the dark brown marginal line, which is expanded at the apex into a round black spot, there are small black spots. Costa-Rica.
- admirabilis*. **P. admirabilis** *Schs.* (50 g) shows white forewings scantily strewn with blackish-brown, with fine brown transverse lines, the anterior line below the cell expanded into a large brown spot; at the cell-end there is a similar, outside white-edged spot behind and below which a bluish-grey shadow follows; the discal area is partly shaded with light brown; at the margin there are 2 large bluish-grey spots, the lower, triangular one being somewhat darker. Hindwing white, at the apex and margin broad brownish grey. Costa-Rica.
- micralis*. **Ph. micralis** *Hmps.* Forewing greyish-white, tinted red-brown and strewn with dark brown, with traces of double dark antemedian, median, postmedian, and subterminal lines; at the cross-vein there is a dark spot; the distal-marginal half of the costal margin is dark brown with oblique white striae, the marginal area is dusted with red-brown, with a darker marginal line. Hindwing greyish-white, dusted with red brown. Expanse of wings: 14 mm. Mexico, Teapa (Tabasco).
- argentifera*. **Ph. argentifera** *Hmps.* Forewing yellow, in the basal area more whitish, strewn with blackish-brown; the brown anterior transverse line extends obliquely from the costal margin to the discal fold, above the cell-end there is an oblique brown streak, below it an oblique discal streak which is connected with a silvery streak on the submedian fold, at the inner margin near the distal margin there is another silvery streak, before it an oblique yellowish-white submedian band; blackish-brown marginal streaks are inside pupilled silvery. Hindwing yellow with a blackish postmedian line with a silver-strewn spot before it. Expanse of wings: 20 mm. Amazons.
- aurilinea*. **Ph. aurilinea** *Schs.* (50 g). Forewing whitish, strewn and streaked in brown, with a broad golden antemedian line, a black dot in the cell-end and a reddish-yellow subterminal shadow; the lower marginal half is silvery violet enclosing 2 black spots. Hindwing greyish-brown with a darker cellular spot and postmedian line. Costa-Rica.
- mydronotum*. **Ph. mydronotum** *Dyar* (50 g) is light grey on the forewing with a metallic violet anal spot and traces of such a spot in the centre of the inner margin. Hindwing similar, but the violet colour more faded. Abdomen above black and metallic blue with golden ring-indentations. Panama.
- grandimacula*. **Ph. grandimacula** *Schs.* (50 g). Forewing whitish, with brown transverse striae, easily recognizable by a large blackish-brown spot in and behind the cell-end; transverse lines fine, the anterior line grey and double, the posterior line single, brown; the white subterminal line is dentate, inside shaded with brown. Hindwing whitish grey. Costa-Rica.
- brimleyana*. **Ph. brimleyana** *Dyar* (50 g) is closely allied with *grandimacula*; forewing grey, densely streaked metallic black, with fine blackish, approximated transverse lines and a round jet-black spot at the cell-end; a light undulating subterminal line is rather indistinct. Hindwing grey. Abdominal end metallic black. North Carolina.
- bilineata*. **Ph. bilineata** *B. & McD.* (50 g) is allied to the two preceding ones, but it lacks the large black spot at the cell-end. Forewing olive grey, streaked black with black transverse lines which are bordered with white on both sides, and a short black longitudinal streak at the cell-end; a feeble white subterminal line is thickened like a spot at the apex. Hindwing brownish-grey. Texas.

19. Genus: **Toana** *Wkr.*

Distinguished from the neighbouring genera chiefly by the different course of the subcostal branches, the 3 lower ones rising on a joint stalk, the two upper ones rising separately from the cell. The middle palpal joint is above towards the end set with outstanding scales. Besides Indian and African species also an American one was described:

- excisa*. **T. excisa** *Hmps.* exhibits a strong indentation at the discal fold of the hindwing. Forewing dark brown, mixed with white, with double median and postmedian transverse lines filled with white, the anterior line being single, only at the costal margin double, at the cell-end with a blackish-brown discal spot; costal-marginal

area deep chocolate brown; undulate line white, inside shaded with dark brown. Hindwing reddish-brown with a white postmedian line which is spotted brown on both sides. Expanse of wings: 12 mm. Jamaica.

20. Genus: **Neocerynea** *Hmps.*

Proboscis fully developed, palpi very similar to those in *Toana*, but with a longer, thickly scaled terminal joint; the scaled thorax exhibits in front a large flattened tuft and on the metathorax a knob-shaped tuft of metallic scales; abdomen tuftless; front legs long-haired. Forewing with the normal neuration with an accessory cell, hindwing with a strongly developed middle radial. Only 1 species:

N. sabulosa *Schs.* (50 g) was described as *Capnodes*, but we had no access to the description of this *sabulosa*. species. We are greatly indebted to the author for supplying us with the figure.

21. Genus: **Homocerynea** *B. u. McD.*

The description of this genus almost entirely coincides with the preceding genus, but the last palpal joint is apparently longer and pointed and the prothorax tuftless; the metathorax likewise exhibits a knob of metallic scales. Only one Geometrid-like species.

H. cleoriformis *B. & McD.* (50 h). Forewing densely dusted and strewn with smoky brown, with *cleoriformis*. nebulous irregular darker brown transverse lines proceeding from triangular costal-marginal spots; posterior line dentate, bordered with white; the reniform macula is an oval brown spot; subterminal area darker brown, larger spots at the costal and inner margins, and a triangular spot at the distal margin above the centre; fringe speckled. Hindwing very similarly coloured and marked. Arizona.

22. Genus: **Oenoptera** *Hmps.*

Like the preceding ones, but with shorter erect palpi which are less densely scaled, with very short terminal joints; on the basal antennal joint there is a small hair-tuft. Thorax clothed with scales and hairs, tuftless. The pointed forewing lacks the accessory cell and the third subcostal branch (counted from above). The middle radial branch of the hindwing is fully developed.

O. albimacula *Hmps.* has red-brown forewings mixed with whitish, with whitish transverse lines, the *albimacula*. posterior one inside shaded with dark brown, touching the oblique white, inside black discal streak in front of which a dark median line extends, which is dusted with whitish inside at the costal margin; the red-brown subterminal shadow is interrupted by an oblique white spot extending from the discal fold behind the postmedian line to the centre of the distal margin. Hindwing whitish, dusted with red-brown. Expanse of wings: 12 mm. Panama.

O. leda *Schs.* (50 h). Forewing brown with lighter patches from the cell-end to the apex and anal angle, *leda*. dusted with silvery steel-grey between the transverse lines, at the base of the cell and at the margin in the spaces between the veins; transverse lines blackish-brown with lighter borders and accompanied by silvery grey shadows; the reniform macula is an oblique brown line from which darker shades extend to the anal angle. Hindwing brownish-grey. Costa-Rica.

O. rhea *Schs.* (50 h). Forewing dark brown, shaded with dark steel-grey with a silvery lustre, with *rhea*. fine light transverse lines, on the opposed sides shaded with dark, the anterior line almost removed into the centre; reniform macula as in *leda* an oblique dark brown, outside lighter streak; undulate line light brown, interrupted by a large light brown marginal spot. Hindwing greyish-brown. Much smaller than *leda*. French Guiana.

23. Genus: **Oruza** *Wkr.*

Proboscis developed, the rather long slender palpi are erect and smoothly scaled; thorax and abdomen smoothly scaled, tuftless. The neuration of the broad forewing is normal with an accessory cell. The middle radial branch of the hindwing is fully developed below the centre of the cross-vein. Beside numerous Indian (cf. Vol. XI, p. 242) and African species also a few American species have been described.

O. rectilineata *Hmps.* (50 h). Forewing red-brown with a pure white costal-marginal stripe, whitish *rectilineata*. transverse lines shaded with dark on the opposed sides, and a white dot surrounded by brown, at the lower cell-end; small blackish-brown subterminal spots. Hindwing similarly marked. From British Guiana.

O. leucocraspia *Hmps.* (50 h) is very similar, the anterior transverse line yellowish, undulating, not *leucocraspia*. straight as in the preceding species, behind it a white, black-ringed ring-macula, undulate line distinctly white, dentate, also on the hindwing. Panama.

- albicostata*. **O. albicostata** *Drc.* is likewise very similar to the preceding ones, larger, more yellowish, with a dark, not white-centred reniform macula, undulate line yellowish, outside shaded with blackish-brown. Arizona and Mexico.
- albocostaliata*. **O. albocostaliata** *Pack.*, described as *Acidalia*, is very similar to *albicostata*, the white costal-marginal stripe is much broader, the discal dot very small, a round dot, not a lunula, the undulate line much more indistinct. Atlantic States.
- costalis*. **O. costalis** *Dyar.* (50 b) is grey with a reddish tint and a straight broad dingy yellowish white stripe leaving the extreme costa dark; transverse lines straight, very fine whitish, the median area between them shaded with blackish, with a blackish discal streak; undulate line whitish, eurved from the costal margin to the centre of the distal margin, below it sharply dentate. Hindwing the same. Mexico (Misantla, Orizaba).
- chionocraspis*. **O. chionocraspis** *Hmps.* Forewing red-brown, at the margin tinted with grey, with a silvery white costal-marginal stripe, in the basal area dusted with fiery red; transverse lines faded, anterior line dark brown, posterior line finely edged with white, between both a small dark discal spot; undulate line indistinct, grey, outside with black dots. Hindwing the same. Expanse of wings: 22 mm. Venezuela.
- doto*. **O. doto** *Schs.* (50 h). The basal half of the forewing is purple brown, outside bordered by the yellowish-white reniform macula and posterior transverse line, behind it blackish-brown, before the fine irregular grey undulate line shaded with purple, in the marginal area purple grey; the light anterior transverse line is punctiform and does not quite reach to the inner margin. Hindwing the same. Surinam.

24. Genus: **Ectrogatha** *Hmps.*

Distinguished from the preceding genus by the falciformly eurved apex of the forewing with a deep indentation below it and an angle on the lowest radial branch.

- himerata*. **E. himerata** *Wkr.* (50 h). Forewing light reddish-brown, strewn darker, particularly at the costal margin, with fine blackish-brown transverse lines and the reniform macula thickly surrounded with blackish-brown; marginal area darkened brown, on the hindwing more red-brown. Brazil (Amazons).

25. Genus: **Cobubatha** *Wkr.*

This extensive genus, known also as *Tripudia*, contains the smallest Noetuids, the exterior and behaviour of which resemble the *Micro*-genus *Choreutis*. They are small, broad-winged lepidoptera, with frequently orange hindwings, a well developed proboscis, erect palpi of medium length, smoothly scaled body with double tuftlets on the metathorax and a flat tuft on the metathorax; the abdomen likewise exhibits a row of tufts on the first rings, the largest on the 2nd ring. On the forewing the 3 middle subcostal branches are stalked, the upper and lower ones rising freely, the accessory cell is absent; the middle radial of the hindwing is fully developed and comes forth near the lower cell-angle.

- hippotes*. **C. hippotes** *Drc.* (50 h) has purple grey forewings, with a reddish-brown tint towards the margin, with a broad, deep velvety brown median area, the latter at the costal margin somewhat narrower, bordered by fine black, white-edged lines, with a small black discal spot surrounded by white; a light undulate line is hardly visible. Hindwing brownish-grey with a copper tint. Mexico (Guerrero, Zaeualpan).
- rustica*. **C. rustica** *Dyar* (50 h) is very similar to *hippotes*, smaller, brownish-grey with a slight pink tint, the dark red-brown median area towards the base not so distinctly defined, before it lead-coloured irroration; the reniform macula is a small dark brown spot, before the irregularly dentate white undulate line some lead-coloured shading. Hindwing lighter greyish-white. Mexico (Cuernavaca).
- ipilla*. **C. ipilla** *Dyar* (50 i) is likewise similar, as large as *hippotes*, much lighter, yellowish-grey, the median area pinkish-brown, inwardly faded, only the exterior white border-line distinct, the interior one quite indistinct; undulate line distinct, blackish, irregularly dentate. Mexico (Cuernavaca).
- damozela*. **C. damozela** *Dyar* (50 i). Forewing dark silvery grey, with 2 oblique fine brownish antemedian lines, a broad blackish median transverse line, in a concavity of which the reniform macula is situate; in the postmedian area there are several brownish faded dentate lines, before the apex a black trapezoid spot, and before the centre of the distal margin a black triangular spot. Hindwing brownish-grey. Mexico (Tehuacan).
- munna*. **C. munna** *Dyar* (50 i) is very similar to *damozela*, the basal half is lighter whitish-grey, bordered by a fine black line with a brown parallel band from the inner margin to the median, the posterior transverse line as in *damozela* enclosing the reniform macula; before the dark undulate subterminal line there is only a black costal-marginal spot. Hindwing lighter. Mexico (Tabasco).

C. idrica *Drc.* is a somewhat larger species, reddish-brown with a large conical blackish-brown spot *idrica*, bordered by white from the centre of the inner margin to the cell, a double anterior brown transverse line filled with white, and a black discal dot; the upper subterminal half is red-brown, outside bordered by the grey undulate line. Hindwing copper-brown. Mexico to Guatemala.

C. hirasa *Drc.* is very similar to *idrica*, the dark inner-marginal spot narrower and club-shaped by an *hirasa*, indentation on the outside near the inner margin, inside and outside it is connected with the costal margin by black streaks. Hindwing reddish greyish-brown. Mexico, Yucatan.

C. metaspilaris *Wkr.* (= *signiferana* *Wkr.*) (50 i) is easily recognizable by the inner-marginal spot being *metaspilaris*, triangular and ending pointed in the cell; the black anterior transverse line is on one side bordered with white, the white edged reniform macula is 8 shaped; the posterior double transverse line is rather indistinct, the white undulate line inside bordered with black. Hindwing copper-brown. Haiti.

C. numa *Drc.* Forewing light red-brown with a silvery gloss; the blackish-brown inner-marginal spot *numa*, is of a conical shape, extending into the cell and bordered by black, white-edged lines, inside connected with the costal margin by the black antemedian line; behind the cell a silvery costal-marginal spot with a small dark spot in front of it; behind the very indistinct double undulate line the marginal area is yellowish-white with a black triangular spot on the discal fold. Hindwing dark brown. Mexico to Colombia.

C. pinax *Dyar* (50 i). Forewing greyish-brown, without the yellowish tint of *numa*, otherwise very *pinax*, similar, the inner-marginal spot conically truncated with a small wedge-shaped spot above it at the costal margin, all the markings edged with dull silvery, the large reniform macula light silvery grey; the fine dark postmedian line is strongly incurved at the reniform macula and once more below it; subterminal line silvery grey, the margin behind it narrow black, behind the cell pointedly triangularly projecting inwards, somewhat less submedianly. Hindwing blackish brown with whitish fringe. Ecuador.

C. scobina *sp. n.* (50 i) is allied to the two preceding species; the ground-colour is a silvery pink, with *scobina*, brownish transverse striae; behind a purple basal inner-marginal spot there is a red-brown transverse band; the blackish-brown inner-marginal spot is truncate triangular, irregular, bordered by black lines extending to the costal margin, pointedly projecting outward on the submedian fold; the reniform macula is centred with red-brown and is situated in an oblique red-brown costal-marginal band which is united with the broad red-brown subterminal area behind the lower cell-end; undulate line silvery, discally and submedianly inwards acute-angular, distal margin narrow blackish-brown, twice triangularly projecting inwards. Hindwing blackish-brown with lighter fringes being white at the ends. Peru (Cuzco); type in the Coll. DRAUDT.

C. punctifinis *Hmps.* (50 i). Here the whole interior half of the median area as far as the costal margin *punctifinis*, is blackish-brown, the insect thereby recalls *hippotes*, white transverse lines border on it; the posterior transverse line is only in the lower half more distinct; the dark undulate line begins with a larger spot at the costal margin, behind it there is a marginal row of black dots. Hindwing brown. Bahama Is.

C. ochrocraspis *Hmps.* (= *numa* *Drc.* part.) (50 i). The red-brown forewing is lighter in the median *ochrocraspis*, area with a silvery lustre and with a truncate conical red-brown inner-marginal spot bordered with black; the transverse lines are indistinctly double, in the cell-end a dark spot; the black undulate line is inwards shaded with deep red-brown; at the distal margin there is only a fine black line inside bordered with yellowish, by which it is at once discernible from the somewhat similar *scobina*. Hindwing dark copper-brown. Mexico (Jalapa).

C. quadrifera *Zell.* (= *catena* *Drc.*) (50 i) is a smaller insect than preceding ones, of a more purple grey *quadrifera*, ground-colour, otherwise very similar in the marking, the inner-marginal spot obliquely quadrangular, above it in the upper cell-end a black V-shaped mark, the indistinct undulate line almost straight. Hindwing reddish-brown. Widely distributed from Missouri and Texas to Colombia and Guiana, also in Jamaica and Grenada.

C. limbata *H.-Edw.* (50 i). Forewing light yellowish-red, in the distal half of the median area with a *limbata*, blackish transverse band, behind it dusted with greyish-brown, with indistinct double transverse lines and a black median line; at the cell-end a light streak inside bordered with black, with a black dot behind it. Easily recognizable by the orange hindwing with a very narrow dark margin. Texas, Mexico, and Guatemala. — ab. *anaea* *Drc.* shows the marginal half of the forewing more darkened. *anaea*.

C. rilla *Dyar* (50 i) is very much smaller than *limbata*, dark grey strewn with metallic purple scales *rilla*, and with a straight dark brown median band which is narrowed in the costal half; the distinct dark undulate line is introangular subcostally and in the lower distal-marginal third. Hindwing orange with black fringe. Peru (Cotahuasi).

C. orcidia *Drc.* (50 i) is only as large as *rilla*, on the forewing more copper-reddish with a blackish- *orcidia*, brown basal area and a somewhat darker brown marginal area; transverse lines black, only the posterior line double, bordered resp. filled with silvery grey; the reniform macula is a small round spot surrounded by grey;

the silvery grey undulate line is inside shaded with black. Hindwing orange, at the costal margin, on the folds and fringe black. Mexico (Guerrero, Tabasco).

- flavofasciata*. **C. flavofasciata** Grt. (= *versutus* H.-Edw.) (50 k) is easily noticed by the oblique orange antemedian band on the dark brown forewing; the black transverse lines are bordered with silvery on the averted sides, the reniform macula is a small silvery luna; behind the silvery undulate line the apex is tinted copper red. Hindwing dark brown. Alabama, Texas, Colorado, New Mexico.
- luda*. **C. luda** Drc. (50 k) is on the forewing blackish-brown, slightly mixed with red-brown, in the antemedian area broad, light, reddish-ochreous with black median and postmedian transverse lines, the exterior one double, filled with silvery purple, with an elliptical reniform macula; the violetish silvery undulate line is on both sides shaded with blackish. Hindwing blackish-brown. From Arizona, Texas, Mexico, Peru, and Argentina.
- petulans*. **C. petulans** sp. n. (50 k) is on the forewing almost exactly coloured and marked as *luda*, but it is smaller, the distal border of the light antemedian band forms a larger outward curve below the cell. Very easily discernible by orange hindwings which are similarly marked as in *oreidia*, but still more blackened. Peru (Cuzco).
- dreptica*. **C. dreptica** Dyar (50 k) is exactly marked as *luda*, but the colour is quite different, the basal area light silvery grey, with a violet tint, outward lightest, almost white; the rest of the wing is violetish-black, with deeper black markings, the silvery grey undulate line is very irregular, behind the cell very pointedly intro-angular and inside bordered with deep black, the margin behind it narrow red-brown. Hindwing light greyish-brown, at the margin darker. Mexico (Tehuacan).
- monada*. **C. monada** Dyar (50 k) resembles *dreptica*, but it is darker, the light basal area less contrasting, more copper brown, narrower, and bordered by a very straight, not curved line; the violetish-black distal area is scarcely marked, only a black subapical spot is more distinct. Hindwing black with a bronze gloss. Mexico (Jalapa).
- millidice*. **C. millidice** Dyar (50 k). Forewing at the base broad lead-coloured, the rest coppery blackish; the interior undulate transverse line is broad, violetish-grey, the exterior one not far away from it, similar; the maculae are lead-coloured small spots surrounded by black areolate lines; the violetish-grey undulate line is inwards bordered by black spots. Hindwing brownish-black. Mexico (Tehuacan).
- euproptopa*. **C. euproptopa** Dyar (50 k). The basal third of the forewing is light coppery violet, the median area blackish, bordered by curved black lines, with a copper gloss; the marginal area is less dark with a black subapical spot and a smaller one below it. Hindwing bronze black. Mexico (Guadalajara, Jalapa).
- icria*. **C. icria** Dyar (50 k). Forewing behind the dark brown base with a violet silvery band distally bordering in a curved line on the dark brown median area which is below the cell parted by a light ray and ends above it at the costal margin in a triangle, outside bordered by a violetish silvery oblique band. Marginal area copper brown, strewn with lilae, with a black spot in the centre of the margin. Hindwing blackish. Panama.
- paidica*. **C. paidica** Dyar (50 k). Forewing at the base dark brown, followed by a broad light lilae oblique band with a red-brown transverse line in it; median area brown, marginal area lighter with long black subapical streaks. Hindwing dark brownish-grey. Panama.
- periusia*. **C. periusia** Dyar (50 k). Forewing in the basal third blackish, scantily intermixed with violetish silvery scales, behind it follows a broad dingy brownish ochreous band, outwards bordered by a curved deep brown band; the marginal half is blackish, dusted with purple, instead of the undulate line somewhat lighter irrorated, with a light apical spot. Hindwing blackish-brown. Argentina.
- goyanensis*. **C. goyanensis** Hmps. (50 k). Forewing yellowish red-brown, at the base blackish-brown, dusted with grey, before the brown posterior transverse line dusted with red-brown; undulate line black, outside faded and with silvery scales. Hindwing reddish blackish-brown. Argentina.
- tortricopsis*. **C. tortricopsis** Dyar (50 k). Basal half of forewing blackish, in the middle outside angular, behind it light grey, with a faint flesh-coloured tint, at the apex shaded with dark, with 4 silvery white small costal-marginal streaks, distal margin black. Hindwing brownish-grey. One of the smallest species from Panama.
- balteata*. **C. balteata** Sm. (50 k). The grey forewing is strewn with brown, with a broad oblique brownish-ochreous antemedian oblique band, outside bordered by the whitish-edged median line; in and below the cell-end dusted with red-brown, with a curved black discal streak; the grey undulate line is inside bordered with red-brown, with short black subapical streaks behind it. Hindwing reddish-brown. Arizona.
- gilda*. **C. gilda** Drc. resembles a little *balteata*, but the antemedian oblique band is more silvery grey with a slight red-brown tint, the posterior transverse line is distinctly bordered with silvery grey; before the grey

undulate line which is introangular on the folds, there are 2 black spots below the costal margin and in the centre. Hindwing grey, on the veins and margin brownish. Mexico (Tabasco).

C. bipars *Hmps.* (50 l) is nearly the most similar to *luda*, but the basal area is not dark, but the whole basal half reddish-ochreous, the rest of the wing dark red-brown with a grey reflection; transverse lines double; behind the undulate line which is inside shaded with blackish, the marginal area shows a golden gloss. Hindwing copper-brown. Argentina.

C. orthodoxica *Dyar* (50 l). Forewing with a light grey gloss, densely strewn with dark, with undulate curved, below black transverse lines, before the light reniform macula there is a dark spot, before the centre of the distal margin a black spot; in the apical end of the costal margin there are small silvery streaks. Hindwing brownish-black. Panama.

C. semipallida *Hmps.* (50 l) is very similar to *orthodoxica*, in the basal half more olive ochreous, outside chocolate brown with a silvery gloss; the reniform macula and the filling of the posterior transverse line silvery grey, behind the similarly coloured undulate line there is a copper-red apical spot. Hindwing coppery brown. Dominica.

C. paistion *Dyar* (50 l). Basal half of forewing light reddish yellow, outside purple brown, inside bordered by a black band; at the distal margin there is a narrow light line. From Panama.

C. luxuriosa *Sm.* (50 l) is very similar to *quadrifera*, but it lacks the dark inner-marginal spot; forewing greyish-brown, outside mixed with red-brown, slightly strewn with silvery blue, and with double transverse lines filled with yellowish and silvery blue, the maculae finely surrounded by black; undulate line composed of silvery lunulae being inside bordered with black, behind them a copper-red apical spot. Hindwing copper-brown. Arizona, Mexico.

C. dimidata *Sm.* (50 l), described as *Acontia* and by HAMPSON also regarded as *Tarache*, is whitish-ochreous in the basal half of the forewing, whilst the distal half is blackish-brown with grey irroration, the two colours being separated by the black median line; reniform macula lead-coloured, in a white ring; the black postmedian line is outside bordered with silvery grey, and before the subterminal line there is spot-like yellowish-white irroration. Hindwing yellowish-brown. Expanse of wings: 16 mm. Arizona.

C. subterminata *Hmps.* (50 l). Forewing ochreous brown, in the marginal half darker, dusted with grey, with an intense red-brown median shadow and fine indistinct double transverse lines; the reniform macula is a tiny brown spot; the undulate line is composed of a few small black dots near the costal margin and in the centre, the latter dots being confluent. Hindwing coppery brownish-grey. Mexico to Colombia.

C. umbrifera *Hmps.* (50 l) is very similar to *ochrocraspis*, though without the dark inner-marginal spot; forewing brownish-grey, strewn darker, with double transverse lines filled with silvery grey; the silvery grey undulate line is inside shaded with deep blackish-brown, the marginal area behind it is dusted with red-brown excepting the anal angle. Hindwing copper-brown. Paraguay.

C. nubidice *Dyar* (50 l). Forewing blackish, mixed with bronze and lead-colour, with very feeble lighter crenulate transverse lines and black maculae which are surrounded by light; at the anal angle there is a whitish patch and a blackish wedge at the margin behind the cell. Hindwing blackish-brown. Mexico; Guadalupe.

C. catada *Drc.* Forewing dark copper-brown, strewn with silvery purple, with black dentate silvery purple transverse lines and similar maculae which are finely surrounded by black; the violet silvery undulate line is inwards spotted black; the marginal area is red-brown excepting the anal angle. Hindwing dark copper-brown. Mexico.

C. inquaesita *B. & Benj.* is a different small species, its exterior resembles more an *Ozarba*. Forewing violetish grey, shaded with brownish and black, in the basal area brown; the brownish anterior transverse line is situated in a lilac white antemedian area, in the brown posterior half of the median area a black median line; the posterior transverse line is double, black, filled with violetish-white, at the cell-end acutely angled; the small reniform macula is violetish-grey, centred with greyish-brown; the subterminal area is dark brown in the upper third, outside bordered by the white undulate line which is obsolete below. Hindwing greyish-brown. Expanse of wings: 11 mm. Arizona.

26. Genus: **Melamera** *Hmps.*

Exactly built like *Cobubatha*, but on the forewing with an accessory cell and the normal Noctuid neu-ration. Only 1 species has been described:

M. velutina *Hmps.* (50 l) is a small light red-brown insect with a large obliquely quadrangular blackish-brown inner-marginal spot which is bordered by whitish, and a similar, though much smaller triangular spot at the costal margin before the apex; the posterior transverse line is rather indistinct, brown, the reniform macula represented by a black dot with a Y-shaped marking below it. Before the white undulate line brown dusting. Hindwing copper-brown. Colombia.

27. Genus: **Abacena** Wkr.

Likewise very closely allied to the two preceding genera, with the neurulation of *Melamera*, separated by longer, more porrect palpi, a small hair-tuft on the frons; the scaled thorax and abdomen are tuftless.

discalis. **A. discalis** Wkr. (= *palliceps* Fldr.) (50 l). Forewing as far as the posterior transverse line deep red-brown with a yellow-reddish costal-marginal stripe, the marginal portion ochreous red-brown, both separated by the whitish postmedian line; the spotted darker undulate line begins with an indistinct oblique shadow from the apex. Hindwing reddish-brown. Brazil (Amazons).

accincta. **A. accincta** Fldr. is similar, but the basal and costal-marginal areas are grey with a silvery blue gloss; the blackish-brown median area is cut out above in the cell, enclosing a white lunula, the exterior upper end being pointedly extended, on both sides bordered by the fine black transverse lines which are bordered with white on the averted sides; the marginal area is yellowish-brown, before the very indistinct undulate line brownish-grey and covered with whitish scales. Hindwing greyish-brown. British Guiana and Brazil (Amazons).

rectilinea. **A. rectilinea** Hmps. Forewing light red-brown, mixed with whitish, especially behind the straight postmedian line which is white like the anterior transverse line, shaded with brown on the opposed sides; the white undulate line is inside shaded with blackish-brown, on the discal fold incurved, in the middle excurved. Hindwing light red-brown, mixed with whitish. Expanse of wings: 22 mm. Brazil.

28. Genus: **Microphaea** Hmps.

Separated from *Abacena* by erect palpi, smooth frons and not quite free uppermost subcostal branch which anastomoses with the second from above.

nyctichroa. **M. nyctichroa** Hmps. (50 l). Forewing purple, strewn darker, behind the middle lighter, with blackish transverse lines, the anterior line very indistinct, in the centre of the cell and at its end white dots. Hindwing dark brown. Panama.

griseata. **M. griseata** Hmps. (50 l) is grey on the forewing with purple brown irroration and dark brown transverse lines which are bordered with grey on the averted sides, as well as a small black discoidal spot; the fine red-brown marginal line is inside bordered with grey. Hindwing the same. Brazil.

29. Genus: **Taseopteryx** Btlr.

Palpi longer, straightly porrect and triangularly scaled, at the ends hairy, the male antennae pectinate; thorax scaled and tufted like *Cobubatha*, but the abdomen with but one basal tuft on the 1st ring; neurulation as in *Abacena*. Only 1 species is known.

sericea. **T. sericea** Btlr. (50 m). Forewing yellowish-white, in some places dusted with red-brown, with a yellowish-white oblique patch from before the middle of the costal margin analwards, a similar one in the cell and from there obliquely outwards to the costal margin, as well as a third from the apex subterminally, below the cell-end with a dark brown triangular spot, above it the large yellowish-white reniform macula; the double black posterior transverse line is filled with white; in the marginal area whitish internerval streaks. Hindwing light brown. Chile.

30. Genus: **Trogotorna** Hmps.

Separated from *Microphaea* by a truncate conical frontal projection with a raised margin, scaled thorax with a small loose tuft on the prothorax, behind tuftless, the abdomen with a tuft on the first ring. On the long narrow forewing the accessory cell is absent, the three lower subcostal branches are stalked, the two upper ones free, above the anal angle with a deep indentation.

persecta. **T. persecta** Hmps. (50 m). Forewing blackish-brown in the costal half, below it a whitish longitudinal patch, below it the wing is pinkish-brown; darker transverse lines are only visible in the lower half. Hindwing reddish-brown. Panama to Paraguay. — Another form (= ab. 1. Hmps.) is more monotonously coloured, the costal-marginal portion lighter and without the whitish longitudinal patch, the inner-marginal portion darker brown.

31. Genus: **Drobeta** Wkr.

Of the same structure as *Cobubatha*, but the palpi are somewhat longer, and the body is clothed with hair and hair-scales, and tufted as in *Cobubatha*. On the forewing the 4 lower subcostal branches are stalked, only the uppermost being free.

D. exscendens Wkr. (50 m). Forewing on the whitish ground dusted with red-brown and yellowish *exscendens*, with a large round black spot in the disc, which extends almost from the costal margin to the inner margin; the transverse lines on the averted sides bordered with whitish, before the whitish undulate line with small black sagittary spots. Fringe red-brown speckled with black. Hindwing dark brown. Venezuela.

D. melagonia Hmps. (50 m) is strewn with purple grey instead of yellowish, the black discal spot is only *melagonia*, present in its upper half and outside below the cell deeply concave; the other markings are similar as in *exscendens*. Hindwing blackish-brown. Panama; Trinidad.

D. delectans Wkr. (50 m). Like *melagonia*, but here there is but a small costal piece left of the large *delectans*, black discal spot; ground-colour ochreous brown, strewn with black, therefore on the whole darker, in the cell and postmedian area suffused with blackish-brown with a lead-coloured reflection, the transverse lines are distinctly double; the other marking almost the same. Hindwing brown. Brazil (Amazons).

D. perplexa Schs. (50 m). Forewing red-brown, mixed with yellowish ochreous, with a faded dark *perplexa*, subbasal line and a strong black anterior transverse line, the maculae finely surrounded by yellowish; the brown posterior transverse line is only distinct at the costal margin and double, the undulate line indistinctly light. Hindwing yellowish red-brown. Venezuela.

D. phaeobasis Hmps. (50 m) is somewhat similar to *perplexa*, more yellowish, the median area extensive *phaeobasis*, and without markings; posterior transverse line very indistinct light; the light undulate line is inside bordered by small dark sagittary spots, a black wedge behind it on the discal fold. Hindwing copper brown. West-Colombia.

D. brephus Schs. (50 m). Forewing dark brown, strewn with a lighter colour, with hardly any markings; *brephus*, behind the exterior transverse line a yellowish-white patch to the apex where it is divided by a dark spot; in the reniform macula a small light spot; in the upper distal-marginal third a black double streak. Hindwing dark blackish-brown. Panama.

D. bullata Schs. (50 m) is well distinguished by an oblong vesicular swelling of the male hindwing at *bullata*, the lower median branch, corresponding to which there is a deep hollow beneath. Forewing dark brown, basad dusted with black, costal margin in the middle somewhat thickened; transverse lines black, double; the ring-macula is a black ring filled with grey, the brown reniform macula shows a yellow-reddish ring; a blackish-brown subterminal shadow is in the upper half thick and intense, below it indistinct, outside light brown. Hindwing blackish brown, around the cavity whitish. In the ♀ the reniform macula is situate in a light ground, the postmedian line is filled with whitish. Costa-Rica.

32. Genus: **Parangitia** Hmps.

This genus comprises somewhat larger species with a well developed proboscis, erect palpi with a short terminal joint, the thorax clothed with hairs and scales, with the same tufts as in *Cobubatha* and *Drobeta*, the long abdomen also exhibits tufts on the first rings. On the forewing the 3 lowest subcostal branches are stalked, the two upper ones free. In the first species the male posterior tibiae are remarkably long-haired.

P. veluta Drc. (50 m). Forewing deep velvety red-brown with indistinct dark finely dentate transverse *veluta*, lines, a white dot in the centre of the cell and with a narrow oblique reniform macula which is surrounded by whitish; the subterminal area particularly towards the costal margin somewhat lighter yellowish. Hindwing copper red-brown. Peru.

P. rufa Drc. (50 n) is still larger and darker than *veluta*, red-brown, strewn with black, with indistinct *rufa*, double transverse lines towards the inner margin filled with grey, a yellowish dot in the centre of the cell and an 8-shaped yellowish reniform macula; undulate line grey, the fringe speckled with a darker colour. Hindwing copper-brown. Peru.

P. cervina Hmps. (50 n). Forewing lighter reddish-brown, strewn with dark brown, with double dentate *cervina*, transverse lines filled with grey; the reniform macula consists of 2 black dots surrounded by whitish; behind the quite indistinct undulate line the apex is darkened. Hindwing copper brown. British-Guiana.

P. nephelistis Hmps. (50 n) has grey forewings densely dusted with red-brown, strewn with black, and *nephelistis*, with faded black transverse lines, only the posterior line is double at the costal margin, the small maculae are surrounded by whitish, the reniform macula is on the median somewhat inwards distorted; the undulate line is indistinctly lighter, only at the costal margin bordered with a darker colour. Hindwing copper-brown. Brazil (Amazons).

P. carrioni Dogn. (50 n) was described as *Eriopus* and shows the forewings above the middle somewhat *carrioni*, more angled, red-brown, with a broad blackish subbasal area and with traces of a brown reniform macula; the posterior transverse line is fine, black and rather indistinct; in the somewhat lighter yellowish apex there is a blackish triangular spot, behind the whitish undulate line the margin is darker red-brown. Hindwing red-brown. Ecuador.

P. mosaica Dyar (50 n) is densely dusted with olive brown on the yellowish loam-coloured ground, so *mosaica*, that the ground-colour is purely visible only at the anal angle; the 3 maculae together form a figure like trefoil-leaf of light-ringed spots, the transverse lines are fine black, dentate; the apex is parted by a white, outside

dentate patch; behind the undulate subterminal line the marginal area is dusted darker like spots. Hindwing bronze-blackish. Mexico (Orizaba).

centro-chalea. **P. centrochalca** Dyar (50 n). Forewing metallic bronze-brown, especially in the discal area, the darker basal area is bordered by the black dentate anterior transverse line, the 3 maculae are close together, in light rings as in *mosaica*, the reniform macula somewhat strangulated; before the light undulate line there are small black sagittary spots near the costal margin, behind it the marginal area is darkened. Hindwing blackish bronze. Mexico (Jalapa).

chlorosticta. **P. chlorosticta** Schs. (50 n). Forewing dull brown, at the base of a brilliant green, outward bordered by a darker brown, forming three lines at the costal margin; below the cell with a velvety blackish-brown spot, the cell itself lined green, the green reniform macula with white dots above and below. Fringe towards the inner margin and above the centre green. Hindwing dark with partly green fringe. Costa-Rica.

virescens. **P. virescens** Drc. (50 n) is similar to *chlorosticta*, the marginal area in the lower half extensively mixed with green, below the cell a U-shaped green marking bordered by black, connected with the V-shaped green ring-macula, the strangulated green-edged reniform macula with white dots inside and outside; the posterior transverse line is very strong, black, before and behind it red-brown dusting. Hindwing copper-brown. Peru.

cana. **P. cana** Drc. (50 n). Forewing light red-brown, strewn with a darker colour, in the discal and subterminal areas, excepting the costal-marginal portion, dusted with greyish white, with an indistinct anterior and double posterior transverse line, between the maculae in whitish rings with a square black spot; undulate line whitish, dentate. Hindwing copper-brown. Peru.

guanacaste. **P. guanacaste** Schs. (51 a). Basal area of forewing brown, separated by an oblique black antemedian line from the grey discal area, with a brownish-grey median line between the maculae which are surrounded by the same colour; postmedian line treble, median line brown, the exterior line is fused with a black shadow in the centre of the margin, the subterminal line is only visible at the costal margin and dentate black. Hindwing dark brown. The ♀ is browner, in the discal area partly tinted reddish-brown. Costa-Rica.

diaperas. **P. diaperas** Dogn. (51 a) is very similar to *guanacaste*, the discal area not grey, but brownish ochreous with white-dusted veins and a median shadow between the white, brown-edged maculae; the posterior blackish-brown transverse line is double, obliquely extending to the centre of the margin, the apex above it brownish. Hindwing brown. French Guiana.

temperata. **P. temperata** Schs. (51 a). Forewing brownish-ochreous, mixed with a darker colour, the base and inner margin as far as the posterior transverse line dark blackish-brown, extending along the latter up to the centre of the wing; maculae dark in light rings; below them a third double macula, the black posterior transverse line is situate in the upper portion in an oblique dark patch extending to the centre of the distal margin, the apex above it light; undulate line very near the margin inside edged with dark, apicad with small deep black sagittary spots before it. Hindwing blackish-brown. Mexico, Costa-Rica.

corma. **P. corma** Schs. (51 a). Lighter than *temperata*, almost whitish, below the cell dusted with dark grey with fine black transverse lines and black, light-ringed maculae, between them a median line which, at the lower cell-end, surrounds a light yellowish-red spot; behind the postmedian line there is a broad blackish-brown shadow reaching neither to the costal margin nor inner margin, in the grey subterminal area with dark streaks behind the cell.

grisescens. **P. grisescens** Hmps. (= *delectans* Drc. part.) (51 a). Forewing light reddish-brown, strewn with black, with double black transverse lines filled with whitish; all the 3 maculae are present, the two upper ones black, in whitish rings, the coniform macula is a light spot; undulate line whitish, inside shaded with brown, with a black subapical sagittary spot in front of it, crossed by an oblique dark patch as in *corma*. Guatemala, Panama.

atys. **P. atys** Schs. (51 a) has light brown forewings with a black shadow from the centre of the cell to the distal margin and a similar one below the cell from the base to the centre, and undulate double dark brownish-grey transverse lines. Inner margin as far as the centre light grey; subterminally above the middle black dark streaks. Hindwing blackish-brown. Costa-Rica.

mulator. **P. mulator** Schs. (51 a). Forewing with a rounded distal margin, dark silken brown, in the discal area and at the inner margin strewn with reddish-yellow, with an oblique black basal ray below the cell; anterior transverse line undulating, bordered by light, posterior line blank, spotted, its upper portion in a dark brown oblique shadow to the margin as in *guanacaste* and *temperata*, above it the apical area is light reddish-yellow with a black sagittary spot; instead of the reniform macula only a fine black discoidal streak. Hindwing dark purple brown. Guatemala.

subrufescens. **P. subrufescens** Kaye (51 a). Forewing reddish-yellow, strewn with black, darker at the base of the inner margin and in the marginal area on the discal fold, here as a spot dusted with olive brown; transverse lines brown, the posterior one double at the costal margin, the maculae in feeble whitish rings, below them a third irregular spot in a lighter ring; the light undulate line is finely dentate, inside with small olive brown spots, behind it the margin is darkened. Hindwing reddish blackish-brown. Panama; Trinidad.

P. japyx *Schs.* (51 a) shows monotonously blackish-brown forewings with a silky gloss, the inner margin *japyx*. broadly dusted with dark grey, with fine transverse lines scarcely visible on the dark ground, without maculae, the fringe white at the apex; hindwing blackish-brown, a small spot and the fringe at the anal angle whitish-grey. Costa Rica.

P. circumcincta *Dyar* (51 b) exhibits the discal and submedian folds on the ♂ hindwing modified as *circumcincta*. deep pocket-shaped folds, as in the following *Angitia tiresias*. Forewing olive brown with strong black transverse lines which are united at the inner margin, the posterior line dentate and finely doubled; maculae light surrounded by grey, inconspicuous. Subterminal area narrowly grey, shaded with black. Hindwing blackish-brown. Panama.

33. Genus: **Angitia** *Wkr.*

Of exactly the same structure as *Parangitia*, but the forewing shows an areole and thus the typical Noctuid neuration; distal margin as a rule slightly concave below the apex and projecting somewhat angularly below it. A great number of tropical species have been described from America.

A. tiresias *Drc.* (51 b). ♂ with the modification on the hindwing described in *Parangitia circumcincta tiresias*. Forewing dark red-brown, mixed with yellowish-grey, with black somewhat spotted transverse lines and 3 small black maculae surrounded with whitish; blackish spots behind the whitish undulate line in the centre and at the anal angle. Hindwing coppery brown with a white submedian fold. Guatemala to Brazil.

A. medioplica *Hmps.* shows a similar fold through the lower cell-end of the forewing to the margin as *medioplica*. on the hindwing of *tiresias*, whereby the veins are somewhat curved. Forewing red-brown, mixed with whitish, with double brown transverse lines filled with whitish, an oblique whitish costal-marginal shadow behind the anterior line, and a large greyish-white spot in the median and postmedian areas extending from the cell to below the submedian fold; reniform macula laterally bordered with blackish-brown with a white dot above, the undulate line whitish, spotted blackish-brown inside. Hindwing whitish, dusted with red-brown, with small brown, white-pupilled marginal spots. Expanse of wings: 24 mm. Brazil.

A. ithaca *Drc.* (51 b) has normally shaped wings as all the following species. Forewing dark red-brown, *ithaca*. strewn with yellowish-white, with indistinctly double dentate transverse lines filled with yellowish, maculae with yellowish rings; an 8-shaped yellowish spot before the dentate median line below the cell, small black sagittate spots before the yellowish undulate line. Hindwing coppery brown. Guatemala and Panama.

A. thacia *Schs.* (51 b) is similar to *ithaca* but marked white on a brown ground, with single transverse *thacia*. lines bordered with white on the averted sides, the white-edged reniform macula interrupted by a light brown shadow, the light spot below the cell is absent; some blackish-brown streaks in the upper half of the white-scaled subterminal area and whitish double spots between and below them. Hindwing brown. Costa Rica.

A. flavidorsum *Hmps.* Forewing red-brown, strewn with yellow especially in the costal-marginal *flavidorsum*. portion, with a yellow, outside black basal spot, the double blackish-brown transverse lines filled with yellow, the maculae surrounded with yellow, white dots at the reniform macula above and below; dark brown shading before the interrupted yellow undulate line and small sagittate spots in the centre, a yellow spot behind it on the discal fold. Hindwing red-brown with yellow fringe. Expanse of wings: 30 mm. Panama, British Guiana.

A. caliginosa *Schs.* (51 b) has dark brown forewings shaded with blackish, the dark basal area bordered *caliginosa*. by the greyish-brown double anterior transverse line, the double posterior line being blacker, filled with reddish-yellow; the reniform macula is a reddish-yellow dot; darker undulate lines quite indistinct, forming a spot subcostally. Hindwing blackish-brown. Costa-Rica.

A. ligneola *Schs.* (51 b). Forewing reddish-yellow, dusted with brown, bordered in the basal area by a *ligneola*. velvety black line which terminates near the centre of the inner margin; the ring-macula is a dark dot, the reniform macula large, oval, greyish-white; the posterior brown indistinctly double transverse line is finely dentated and fused with a large blackish-brown spot in the centre of the distal margin, another spot is at the anal angle; apex grey; hindwing blackish-brown. Costa Rica.

A. mesoscota *Hmps.* (51 b) is one of the largest species, red-brown, darkened in the median and marginal *mesoscota*. areas, with double dentate transverse lines filled with whitish, the maculae surrounded with whitish; small darker spots before the dentate indistinct whitish undulate line. Hindwing coppery brown. Trinidad.

A. grandis *Schs.* (51 b) is likewise very large. Forewing dark brown with a broad blackish postmedian *grandis*. shadow in which a double velvety black transverse line is indistinctly visible, 2 black streaks behind it to the centre of the margin, whitish scales before it in the lower half, apex dusted with grey. Hindwing blackish-brown. Costa Rica.

- albicauda*. **A. albicauda** *Hmps.* (51 b) is remarkable for its white hair-tufts at the abdominal end of the ♂. Forewing red-brown, strewn darker, with black transverse lines, the posterior line double, filled with grey, a black wedge extending from it on the discal fold to the margin; maculae indistinctly surrounded with grey, apex and undulate line grey. Hindwing coppery brown. Trinidad; Venezuela, British Guiana.
- pulchra*. **A. pulchra** *Schs.* (51 c). Forewing greyish-white, strewn with brown, basal and apical areas brownish-ochreous, with indistinct double black transverse lines; all the 3 maculae surrounded with white; behind the very indistinct undulate line there is a blackish spot in the centre of the margin. Hindwing dark red-brown, fringe speckled yellowish-white. Panama; Venezuela.
- andrevia*. **A. andrevia** *Schs.* (51 c). Forewing ochreous mixed with lilac at the base, bordered by the dentate black antemedian line, purple blackish-brown behind it as far as the black postmedian line, a black spot behind the latter at the costal margin, a blackish-brown shadow extending on the median radial branch to the margin, above and below which the marginal portion is coloured like the basal area, traversed by the dentate undulate line: fringe speckled with black. Hindwing blackish-brown. Guatemala.
- crepuscula*. **A. crepuscula** *Schs.* (51 c). Forewing purple grey, base and inner margin narrowly brown with black, very irregular transverse lines, the posterior line double, its upper portion is situate in a broad blackish-brown shadow extending between the radial branches to the margin, the apex is whitish grey, spotted darker and enclosing a black streak; the margin is darkened behind the grey undulate line. Hindwing purple brown with black marginal triangles. Guatemala.
- esthera*. **A. esthera** *Schs.* (51 c) has greyish-brown forewings with a yellowish-white basal area and black transverse lines, the anterior line spotted, interrupted, a blackish-brown shadow extends from the large light reniform macula to the posterior transverse line; marginal area blackish-brown excepting a small apical spot, a black spot edged with grey is at the anal angle. Hindwing blackish-brown, the margin dusted with grey. Guatemala.
- attina*. **A. attina** *Drc.* has longer palpi than the other species; forewing greyish-white, strewn with brown, with black rather indistinct transverse lines, the maculae feebly surrounded with whitish, white dots outside at the reniform macula; as in the preceding species, a black oblique shadow extends from the costal margin to the distal margin on the median radial branch: undulate line whitish, shaded with brown on both sides. Hindwing brownish ochreous. Panama.
- ochriplaga*. **A. ochriplaga** *Hmps.* (51 c) also has a longer and thinner last palpal joint; forewing coppery brown, mixed with whitish, with indistinctly double black transverse lines, the upper maculae surrounded with whitish, the narrow reniform macula strangulated and produced inwards below, the coniform macula is a conspicuous yellowish-white spot; a black spot on the discal fold behind the indistinct white finely dentate undulate line. Hindwing coppery brown, fringe white. British Guiana.
- directa*. **A. directa** *Wkr.* (51 c). Basal half of forewing whitish pink, dusted with olive brown outside, with blackish transverse lines, the anterior one incomplete, the pinkish-white maculae connected on the median: blackish dusting behind and below the cell-end, 3 black streaks in the whitish apex, blackish marginal dusting in the centre behind the white dentate undulate line. Hindwing purple brown, lighter yellowish-white towards the base. Venezuela, Brazil.
- melamera*. **A. melamera** *Drc.* (51 e) has whitish ochreous forewings strewn with black, dusted with purple blackish-brown basally and in the interior half of the median area, the exterior half being olive brown with a large blackish spot below the cell-end; transverse lines black, posterior line double, the maculae surrounded by whitish and centred with blackish, the reniform macula is confluent with an oblique spot below the centre of the cell; a black spot on the discal fold behind the indistinct light undulate line. Hindwing red-brown. Panama, British Guiana. — ab. **panamensis** *Strd.* (= ab. 1. *Hmps.*) shows the whole exterior half of the median area suffused with black. Panama.
- tristigma*. **A. tristigma** *Dyar* (51 e). Forewing olive brown, shaded with black and strewn with purple in the basal and median areas, transverse lines almost extinct; all the 3 round maculae are centred with olive, in whitish rings and situated close together; the dentate postmedian line is the most distinct of all, a dark shadow extends from it to the margin. Anal angle whitish. Hindwing blackish-brown. Panama.
- carneopicta*. **A. carneopicta** *Hmps.* (51 c). Forewing pinkish brown, strewn with black and white, apex whitish, dusted with olive brown, with black transverse lines, the posterior one dentate; maculae pink, reniform macula confluent with a pink spot below it; undulate line whitish. Hindwing red-brown, blackish towards the margin. Brazil.
- onerosa*. **A. onerosa** *Schs.* (51 d) has dull brown forewings with fine dark transverse lines which are thicker and darker at the costal margin, and with a large blackish-brown reniform macula strewn with white; a dark shadow behind the postmedian line extends from the costal margin to the median radial branch, a similar spot is close below it; small dark spots before the light undulate line, a larger dark spot behind it in the centre of the margin. Hindwing dark brown. Costa Rica.

A. hermione *Schs.* (51 d). Forewing reddish-yellow, dusted with olive brown, with fine greyish-brown *hermione*. transverse lines, the anterior one bordered with black, the posterior one almost extinct in the middle; maculae in reddish-yellow rings, the undulate line of the same colour, doubled inside in the lower half; apex blackish-brown, mixed with olive. Hindwing dark brown, darker towards the margin. Costa Rica.

A. orestes *Schs.* (51 d). Forewing slate-coloured, light brown in the basal area, bordered by the black *orestes*. undulate antemedian line, the ring-macula bordered outside with white, pinkish-brown strewn behind the cell-end, dark grey strewn at the interior edge of the median area; a broad blackish-brown oblique shadow extends from the posterior transverse line down to the margin between the upper radial branches, and below it there is a round brown and white spot at the margin. Hindwing thinly scaled, lilac brown. Costa Rica.

A. albirufa *Drc.* (51 d). Forewing dark brown, mixed with red, with a white spot traversed by red in *albirufa*. the lower marginal half; transverse lines double, filled with brownish white; maculae surrounded with brownish white, reniform macula triangular; undulate line composed of white dots in the dark ground, of a black line in the white ground. Hindwing coppery brown. Peru.

A. seminigra *Hmps.* Basal half of forewing black mixed with a grey tint and red-brown, marginal half *seminigra*. greyish white mixed with red-brown, with double undulate transverse lines filled with whitish, the anterior one forming a spot above the inner margin; a small light spot surrounded by dark is in the centre of the cell, a small heap of black scales at the cell-end, small black sagittate spots before the indistinct whitish subterminal line. Hindwing greyish-brown. Expanse of wings: 22 mm. Venezuela.

A. camptosema *Hmps.* Forewing ochreous and red-brown as far as the cell-end, at the costal margin *camptosema*. as far as the subterminal line, otherwise purely red-brown with double transverse lines filled with ochreous; maculae strigiform white, bordered with dark brown, the reniform macula S-shaped; the margin behind the silvery white undulate line is dark red-brown. Hindwing red-brown with white subterminal dots. Expanse of wings: 24 mm. Peru.

A. viridans *Schs.* (51 d) is a smaller olive green species with a faint red-brown tint, thickly strewn with *viridans*. black, with black double dentate transverse lines, the maculae surrounded with black; undulate line also blackish, indistinct; fringe purple pink. Hindwing dark brown. Brazil.

A. esmeralda *Hmps.* has emerald-green forewings strewn with dark brown and black, with dark brown *esmeralda*. transverse lines, the posterior line double and with green maculae surrounded with black, white dots at the reniform macula above and below; small black sagittate spots before the green undulate line. Hindwing red-brown with green fringe. Expanse of wings: 30 mm. Trinidad.

A. eriopica *Hmps.* (51 d) is one of the smallest species. Forewing yellow, dusted with red-brown and *eriopica*. strewn with black, with double black transverse lines filled with whitish, a quadrangular black spot between the whitish maculae and a faded spot below the cell-end, undulate line whitish. Hindwing dark brown. Brazil (Amazons).

A. poliosema *Hmps.* has yellowish-green forewings strewn with red-brown, with double brown transverse *poliosema*. lines filled with green, a red-brown band before the anterior line, dark brown dusting behind the exterior line; maculae in green rings, red-brown shading before the green undulate line. Hindwing red-brown with green fringe. Expanse of wings: 28 mm. British Guiana.

34. Genus: **Hypangitia** *Hmps.*

Proboscis developed, palpi straightly porrect, the middle joint twice as long as the head, hairy above and below, the last joint thickly scaled. Thorax scaled, tuftless like the abdomen. Costal margin of forewing bent at the base, then straight, rounded at the apex; areole absent, the 4 lower subcostal branches stalked in pairs, only the uppermost being free. One species only:

H. peratopis *Hmps.* Forewing greyish-white, strewn with dark brown, a semicircular area from the *peratopis*. centre of the costal margin to the apex and below as far as the submedian fold before the margin dusted with red-brown; in the basal area of the costal margin there is a deep brown semicircular spot bordered with whitish below; transverse lines light red-brown, double; a deep brown spot at the apex, with a small white luna inside and 2 white dots before it; before and below it, from the centre of the costal margin to the distal margin a curved dark brown line from which a white sinuate posterior transverse line extends to the inner margin; distal margin otherwise white, striated dark brown. Hindwing whitish, dusted with red-brown. Expanse of wings: 22 mm. Paraguay.

35. Genus: **Chlorocodia** *Hmps.*

Separated from *Angitia* by a small rounded frontal projection with a horny plate below it. Thorax scaled, with loose tufts in front and behind, abdomen with a series of tufts increasing in size posteriorly; distal margin slightly angled in the middle. One species only:

olivescens. **Ch. olivescens** *Hmps.* (51 d). Forewings white, dusted with olive green and strewn with blackish-brown, with rather indistinct double transverse lines, the maculae surrounded with blackish-brown, a small heap of red-brown scales before the reniform macula; narrowly whitish behind the postmedian line; undulate line white. Hindwing whitish, brownish at the margin. Brazil.

36. Genus: **Glaucicodia** *Hmps.*

Of the same structure as *Chlorocodia*, but with only one basal tuft on the base of the abdomen. Forewing without an areole, the 3 lower subcostal branches on one common stalk, the two upper ones arising freely from the cell. One species only:

leuconephra. **C. leuconephra** *Hmps.* (51 d) is similarly coloured and marked as *olivescens*, the forewings dusted olive green and strewn black on the white ground, with double blackish transverse stripes filled with white and bordered with white on the averted sides; the reniform macula is a large white spot extending to the costal margin, slightly produced inwards on the median; a black oblique spot at the apex. Hindwing brownish-grey. Described from Cuba.

37. Genus: **Paracodia** *Hmps.*

Separated from the genus *Glaucicodia* by a small double tuft being inserted in front and behind on the mesothorax between the loose tufts; besides there is an areole on the forewing and the neuration is normal. Some tropical species have been described.

albivena. **P. albivena** *Hmps.* (51 d). Forewing yellowish ochreous, strewn with black, brownish in the median area with a black basal ray and coniform macula, and a silvery white ray on the median, bent down hook-like at the end; a triangular ochreous spot in the cell before the reniform macula; the indistinctly double posterior transverse line meets an oblique blackish-brown apical blotch, a brown longitudinal stripe below the centre extends to the margin. Hindwing light brown. Chile.

globifrons. **P. globifrons** *Dyar* (51 e). Forewing blackish-brown, median line striped light yellow, a light yellow line surrounds all the 3 maculae in a lighter reddish ground; the exterior transverse line is bordered with light yellow on both sides, the light undulate line is irregularly spotted. Hindwing blackish. Mexico (Zacualpan).

puella. **P. puella** *Schs.* (51 e) is recognizable by the broad whitish subterminal band, the forewing is otherwise purple grey, triangularly coppery brown in the median area, with double transverse lines filled with whitish, the maculae surrounded with whitish. Hindwing reddish-brown. Brazil.

praxina. **P. praxina** *Schs.* (51 e). Forewing yellowish-white, dusted with olive brown, with whitish transverse bands bordered with brown on both sides, a blackish spot between the whitish maculae which are centred with red-brown; the undulate line is likewise represented by a narrow whitish band. Hindwing brownish-yellow. Brazil.

albiceps. **P. albiceps** *Drc.* (51 e) is a very small species, lustrous red-brown with lead-coloured silvery transverse bands in the median area and behind the postmedian line, the anterior transverse line double, red-brown, filled with whitish, the posterior line darker, filled with red-brown. No maculae. Hindwing red-brown. Colombia.

38. Genus: **Mictochroa** *Hmps.*

Characterized by short erect slender palpi and a large horny appendage with a raised edge on the frons. They are small insects of a slender structure, the body smoothly scaled and tuftless, with relatively short and broad forewings with an areole and a normal Noctuid neuration. Quite a number of typical species are known.

farona. **M. farona** *Schs.* (51 e) is a larger yellowish-ochreous species dusted with red-brown and strewn with black excepting the postmedian area, with double transverse lines, a broad white-dusted band behind the anterior line in the lower half, the maculae in white rings and centred with red-brown; the white dentate undulate line is dusted with blackish inside. Hindwing yellowish ochreous, brownish at the margin. Brazil.

octosema. **M. octosema** *Dogn.* (51 e). Forewing olive brown with white transverse lines, the posterior line being double in the lower half; maculae in white rings, the reniform macula 8-shaped, the undulate line strongly sinuate. Hindwing lustrous yellowish white. Ecuador.

harmonica. **M. harmonica** *Drc.* (51 e) has brass-coloured forewings dusted with red-brown and strewn with black and white, the median area darkened blackish-brown in the disc, a lead-coloured spot in the anterior lower half of the median area; the finely dentate transverse lines are black, the posterior one bordered with yellow

outside, with black and white vein-dots behind it, and a pink tinge between them; the yellow maculae are in white rings, the reniform macula removed inwards on the median; the white undulate line is dusted with black inside. Hindwing greyish-brown. Colombia.

M. zonella Drc. (51 e). Forewing whitish pink, dusted with brown, olive brown in the distal half of the median area, with more or less distinctly double transverse lines filled with whitish, the brown maculae in white rings, the reniform macula strangulated and produced inwards on the median; the whitish undulate line is bordered with black inside, a black spot behind it on the discal fold. Hindwing brownish grey. From Mexico to Costa Rica.

M. selinitis Dyar (51 f) is very similar to *zonella*, smaller and of a pure grey without the pink tinge, the cell blackened before and behind the reniform macula. Hindwing brownish-grey. Mexico, Tehuacan (Puebla).

M. parigana Schs. (51 f) likewise resembles the preceding species, but the forewing is more red-brown, dusted with a darker brown, the anterior transverse line only single, bordered with white inwards, the white-edged maculae centred with reddish; small black sagittate spots inside before the white undulate line. Hindwing light brownish. Brazil (Castro, Paraná).

M. dolens Schs. (51 f). Forewing blackish-brown, darker in the median area, strewn with white at the costal margin, submedianly and on the veins of the lower cell-angle; the lighter brown transverse lines partly edged with velvety black; maculae light brown, surrounded with velvety black, a small white spot behind the reniform macula; undulate line light brown. Hindwing dark brown. Costa Rica.

M. ambigua Schs. (51 f) has pinkish-brown forewings scantily strewn with black, with fine black transverse lines, only the posterior one distinct, finely undulated. Hindwing brownish-grey, fringe yellowish pink. Costa Rica.

M. albirena Drc. (51 f). Forewing brass-coloured, dusted with dark brown and strewn with greyish-white excepting the basal half of the interior area, the marginal area yellow and coppery red excepting the apex, with double transverse lines filled with yellowish, the yellow maculae surrounded with black, the coniform and ring maculae united, the strangulated reniform macula more whitish; lower half of subterminal area white, dusted with yellowish, the white undulate line dusted with black inside. Hindwing dark brown. Colombia.

M. caterva Schs. (51 f). Forewing reddish-ochreous, strewn with blackish-brown, with double brown transverse lines filled with whitish, the exterior half of the median area dusted with a deeper red-brown; the whitish reniform macula is centred with red-brown and surrounded with black; the undulate line is composed of black dots, a black triangular spot before it at the costal margin. Hindwing brownish-yellow. Brazil.

M. rhodostrota Dogn. (51 f) has chestnut-brown forewings tinted with violet, with white transverse lines with a leaden gloss, the maculae surrounded with white, connected with the costal margin by small white spots above them, the ring-macula almost entirely white, the median area strewn with lilac, purely chestnut-brown behind the postmedian line; the dentate undulate line is indistinct. Hindwing brownish-grey. Colombia.

M. pyrostrota Dogn. (51 f). Forewing of reddish-brown brick-colour, with ochreous markings strewn with brick-red: an oblique submedian streak, the maculae and a broad postmedian band with dentate edges and a branch to the apex. Hindwing lustrous grey with a reddish marginal band. Colombia (Quindiu Pass).

M. thermoptera Drc. (51 f) has deep red-brown forewings, yellowish-red at the base of the inner margin and in the terminal area, the double transverse lines filled with whitish, the maculae in whitish rings, the posterior transverse line introangular on the discal fold, with a black sagittate blotch before it, whitish strewn behind it, a triangular truncate dark brown spot at the costal margin. Hindwing greyish-brown. Peru.

M. triangularis Schs. (51 g). Forewing chocolate brown, broadly reddish ochreous in the costal-marginal area, bordered below with a white and black line; the reniform macula is a narrow reddish-yellow streak, close behind which the double postmedian line filled with whitish extends almost straight down to the inner margin; undulate line light, shaded with blackish outside. Hindwing yellowish red-brown. Brazil.

M. angularis Schs. (51 g) is somewhat similar to *triangularis*, but it has not the broad light costal area, the forewing is more reddish ochreous brown, much lighter in the postmedian area, with a distinct brown anterior transverse line edged with yellowish-white, and a distinct ring-macula, a large dark costal-marginal spot before the undulate line. Hindwing brownish. Brazil.

39. Genus: **Gonophaea** Hmps.

Proboscis developed, palpi erect with a short porrect terminal joint; frons smooth, thorax scaled and tuftless like the abdomen. Forewing with a somewhat produced apex, cut out below it and somewhat angular close above the centre, with an areole and a normal neuration. One species only:

villica. **G. villica** Schs. (51 g). Forewing coppery brown with a purple grey gloss excepting the interior half of the median area and the marginal area, with dark, slightly dentate transverse lines and indistinct maculae surrounded with brown, an indistinct darker undulate line. Hindwing coppery brown. Brazil (Castro, Paraná).

40. Genus: **Chalenata** Wkr.

Small insects of a slender structure, with a stunted proboscis, short palpi and a smooth frons, the tuftless body being smoothly scaled. Forewing broad with a rounded apex and normal neuration with an areole, the first 5 species with pectinated antennae.

mesonephela. **Ch. mesonephela** Hmps. (51 g). Forewing yellowish-white, strewn somewhat darker, blackish in the median area below and behind the cell, edged by faded black transverse lines; traces of a dark undulate line. Hindwing yellowish-white. Argentina.

noxia. **Ch. noxia** Schs. (51 g) is similar, more reddish, the dark brown median area edged by rusty brown lines, with subterminal rusty brown internerval spots, shaded with brown at the margin; the ring-macula is a black dot. Hindwing brownish-grey. Costa Rica.

ustata. **Ch. ustata** Drc. (51 g). Forewing whitish ochreous, brownish in the basal area, the median area broadly blackish-brown as far as the costal margin, posterior transverse line double, filled with ochreous, light brown dusting before the undulate line. Hindwing yellowish-white, dusted darker at the base. Colombia, Panama.

ustatina. **Ch. ustatina** Dyar (51 g) is very similar but smaller, hindwing of a clear straw-colour without the brown dusting, the marginal area of the forewing lighter with clearer, not faded transverse lines. Panama.

quella. **Ch. quella** Dyar (51 g) is quite dark greyish-brown, with hardly any marking, the very indistinct, somewhat lighter transverse lines bordered with a somewhat darker colour, the exterior one somewhat reddish, with a small black discal dot. Hindwing brownish-black with black marginal dots. Panama.

fumosa. **Ch. fumosa** Btlr. (51 g). Forewing greyish ochreous, strewn with dark brown, darker in the distal half of the median area and at the margin; the dark transverse lines are faded, the exterior one bordered with whitish, the undulate line traceably lighter. Hindwing reddish-brown. Brazil.

bilinea. **Ch. bilinea** Schs. (51 g). Forewing purple grey, densely strewn with red-brown, with blackish-brown transverse lines, the exterior one faded, the brown undulate line indistinct. Hindwing reddish-brown. Brazil.

lilacina. **Ch. lilacina** Hmps. (51 h) is feebly strewn with purple brown on the light grey forewing, the blackish transverse lines are slightly undulated, as small blackish discal line is at the cell-end; the feeble whitish undulate line is almost straight. Hindwing greyish-brown. Brazil, Argentina.

micaceella. **Ch. micaceella** Wkr. (51 h) is one of the smallest species, deep olive brown, with silvery blue scales instead of the usual markings, being condensed at the transverse lines into interrupted linear markings. Hindwing of the same colouring and marking. Brazil.

41. Genus: **Phyllophila** Guen.

Distinguished from the preceding genera by a rounded frontal projection with a horny plate below it: the scaled thorax is tuftless, the abdomen with a small basal tuft. Chiefly palaearctic species (cf. Vol. III, p. 273).

eogela. **Ph. eogela** Schs. (51 h). Forewing olive brownish-grey, red-brown at the costal margin, strewn with white, with double brown transverse lines filled with white, the maculae surrounded with whitish, the reniform macula filled with red-brown below, the subterminal area obliquely to the apex whitish, the undulate line feebly dusted with red-brown inside. Hindwing greyish-brown. Brazil.

atrisigna. **Ph. atrisigna** Dogn. (51 h). Forewing yellowish ochreous, strewn with brown, with white transverse lines bordered with brown, the interior half of the median area and the cell white, the posterior half of the median area strewn with blackish-brown; a white subterminal line proceeding from the apex is in the darkened marginal area. Hindwing white, feebly strewn with brownish yellow. Argentina.

42. Genus: **Ozarba** Wkr.

Proboscis developed, palpi erect with a long terminal joint, frons smooth. Thorax smoothly scaled, tuftless, only the abdomen with a basal tuft. Forewing without an areole, the lowest subcostal branch proceeds from the upper cell-angle, the 3 next on a common stalk, the uppermost arises freely from the cell, the upper-

most radial branch from below the upper cell-angle. Many species have been described from all faunistic regions.

O. semipotentia Dyar (51 h) is one of the very smallest species with an expanse of but 13 mm, narrow wings, dark brown with a light flesh-coloured reniform macula bordered with black, a similar spot above it, forming an oblique costal-marginal spot with a distal dent; the apical area behind it is dark, the margin below it light; the very feeble straight transverse lines are light, bordered with dark. Hindwing brownish-grey. Mexico (Tabasco). *semipotentia*.

O. choruba Dyar (51 h). Forewing bronze red-brown, dusted with dark lilac grey as far as the postmedian line and from here triangularly to the apex; the distally dotted reniform macula is incompletely surrounded by black and situate in the light distal area, the darker undulate line is rather indistinct. Hindwing dark brown. Mexico (Jalapa). *choruba*.

O. sciaphora Hmps. (= *laurea* Drc., part.) (51 h) has grey forewings strewn with brown, the interior half of the median area being darkest, with dark transverse and median lines, the postmedian line double; the undulate line is composed of black double dots filled with white, with a white <-shaped mark in the discal fold. Hindwing greyish-brown. Mexico (Jalapa). *sciaphora*.

O. costata Hmps. (51 h) is larger than *sciaphora*, otherwise very similar, with a more distinct whitish reniform macula surrounded by black, recognizable by a flat blackish triangular spot at the costal margin behind the postmedian line, without the light marking on the discal fold in the undulate line. Mexico to Argentina. *costata*.

O. excurvata Hmps. (51 h) is a smaller greyish-brown species with double white-filled transverse lines and white maculae surrounded with black, the ring-macula is a dot, the reniform macula distally prolonged at both its ends; the undulate line is composed of black dots. Argentina. *excurvata*.

O. catilina Drc. (51 h), according to Dyar belongs to this place (it had been described as *Eustrotia*); forewing purple brown, strewn with black as far as the median line, red-brown in the marginal half, with double transverse lines filled with red-brown, a small black triangular spot at the costal margin behind the median line, a larger costal-marginal spot behind the postmedian line: the double undulate line is filled with whitish. Hindwing brown. Mexico (Tabasco). *catilina*.

O. tilora Dyar (51 i), described as *Erastria*, has brownish ochreous forewings being more red-brown in the median area and loamy grey in the marginal area, with double transverse lines, the exterior one filled with whitish, with 2 postcellular dents; spotted leaden grey behind the reniform macula, with 3 black costal-marginal streaks. The white undulate line cuts a little triangle off from the broadly triangular dark brown apex. Hindwing light grey. Mexico (Puebla). *tilora*.

O. oplora Dyar (51 i) is very closely allied to *tilora*, but smaller and darker, less intensely marked, deep brown in the basal half, distally more pinkish-brown, with the similarly coloured reniform macula, the whitish postmedian line forming the same two dents behind it, between which there is a black blotch outside: behind the dark undulate line a narrow light area. Hindwing dark blackish brown. Panama. *oplora*.

O. hemitecta Dyar (51 i) is very similar, the basal half monotonously dark brown, the distal area of a light ochreous tint, the interior transverse and median line only feebly visible, the exterior one as in the two preceding species; a black spot below the yellowish reniform macula; the rather indistinct undulate line is light, irregular. Hindwing dark brownish-grey. Venezuela. *hemitecta*.

O. bascura Dyar (51 i) from the same affinity is larger, dark purple brown at the base, light ochreous outside, the fine median line is distinct, black, the single postmedian line is curved round the reniform macula without the two dents of the preceding species, the light distal area traversed by 4 fine red-brown lines, the subterminal one of which is shaded with black, a dark costal-marginal spot before it is truncately triangular. Hindwing dark brownish-grey. Brazil (Sao-Paulo). *bascura*.

O. agraria Schs. (51 i). Forewing brown, lighter at the distal margin, dusted with blackish at the base, with indistinct double transverse lines filled with reddish-yellow, the posterior one with 2 dents in the upper half; the reniform macula is situate in a long reddish-yellow costal-marginal spot, behind this macula a blackish-brown shadow to the reddish-yellow undulate line behind which there is a velvety blackish-brown costal-marginal spot. Hindwing greyish-brown. Costa Rica. *agraria*.

O. concolor Hmps. exhibits lustrous red-brown forewings with slightly undulated white transverse lines, the exterior one bordered with darker brown inside, a white discoidal streak before it; traces of a darker undulate line, excurved in the middle. Hindwing lustrous red-brown with black marginal dots. Expanse of wings: 18 mm. Peru. *concolor*.

O. angulilinea Schs. (51 i). Forewing brown, anterior transverse line double, filled with light, posterior line very fine black, followed by a light pinkish-brown line, with a light brownish pink discal streak at the cell-end; the light irregular undulate line is shaded darker inside. Hindwing brownish-grey. Costa Rica. *angulilinea*.

O. onytes Schs. (51 i). Forewing brown with a grey antemedian line bordered with red-brown, and a black dot instead of the ring-macula, the reniform macula is represented by a large whitish costal-marginal *onytes*.

spot with a brown discoidal line in it and a large round black spot behind it, which is fused with the postmedian line being bordered with lilac white outside, subterminal area light olive brown mixed with lilac; an oblique deep brown costal-marginal shadow is before the lilac-white undulate line. Hindwing brownish-grey. French Guiana (Cayenne).

vicina. **O. vicina** Schs. (51 i). Forewing reddish purple, darker in the marginal half with double transverse lines, the exterior one filled with whitish; the ring-macula is a black dot, the white reniform macula is surrounded with black; the undulate line is composed of small white sagittate spots inside brownish-grey. Hindwing brown. Brazil (Castro, Paraná).

metaleuca. **O. metaleuca** Hmps. (51 i) has white forewings feebly dusted with brownish, with a black dot in the base of the cell and indistinctly double transverse lines; costal margin and median area dusted with a darker brown, the oblique narrow reniform macula is situate in a white spot bordered inside with black, a brown subapical costal-marginal spot behind it; the white finely dentate undulate line is shaded with brown inside. Hindwing white, brownish at the margin. Brazil (Amazons).

implora. **O. implora** Dyar (51 i). Forewing blackish-brown with white transverse lines, the anterior one interrupted and indistinct, the posterior one with 2 dents behind the cell, black subterminal filling behind it; median line distinct, the reniform macula partly surrounded with white, undulate line fine, white. Hindwing brownish-black. Mexico (Zacualpan).

squamicornis. **O. squamicornis** Dyar (51 k) exhibits olive greenish forewings, shaded with red-brown at the costal and distal margins and at the fringes; the small black reniform macula in an oval green spot; transverse lines fine, brown, undulated, the exterior one double in its upper half, a dark subterminal shadowy line. Hindwing brownish-grey. Mexico (City). The ♂ antennae are thickened here by black scales on $\frac{3}{4}$ of their length.

fannia. **O. fannia** Drc. Forewing reddish brown with double transverse lines, short black streaks behind the exterior line; the ring-macula is a black dot, the reniform macula surrounded with whitish, prolonged below, with a whitish spot above and behind it; a dark subterminal costal-marginal spot; the light indistinct undulate line is shaded with blackish-brown inside, a black apical spot behind it. Hindwing coppery brown. Mexico (Tabasco).

aeria. **O. aeria** Grt. (51 k) is dusted and strewn with brown on the whitish ground, with indistinct transverse lines, the posterior one double, and with an oblique median line, black dusting behind it in the upper half; 2 black streaks behind the whitish reniform macula, a black subapical spot outside above them; the white undulate line is shaded with brown inside. Hindwing brown. United States (Texas).

nebula. **O. nebula** B. & McD. (51 k) is smaller than *aeria*, reddish grey, dusted with olive brown in the distal half of the median area and behind it at the costal margin, with double transverse lines filled with reddish; the narrow oval reniform macula is surrounded with white, a pink tinge behind it. Hindwing light smoky grey. Texas, Florida.

abscondita. **O. abscondita** Hmps. Forewing grey, dusted with red-brown as far as the postmedian line, then lighter brown with a dark postmedian spot from the costal margin to the discal fold; transverse line double, dark brown, filled with whitish, a white, inside dark brown streak at the cell-end, the posterior transverse line with 2 dents behind it, on the discal fold a black streak to the feebly waved undulated line which is bordered with dark brown inside, behind this line a small blackish-brown apical spot. Hindwing greyish-brown. Expanse of wings: 14 mm. Peru.

geta. **O. geta** Drc. has grey forewings tinged with pink and strewn with brown, with a brown median area, of the double transverse lines the anterior one is filled with white, the posterior one with pink; reniform macula narrow and oblique, whitish, surrounded with black and strangulated; the postmedian area contains a large brown costal-marginal spot dusted with grey above, with a black streak on the discal fold, the whitish undulate line bordered with brown on both sides cuts a small apical triangle off from the costal-marginal spot. Hindwing light brown. Mexico to Paraguay.

bicornis. **O. bicornis** Hmps. (51 k) is similar to *geta*, the median area is red-brown only in its distal half, like the large costal-marginal spot behind it; the anterior transverse line is much more excurved below the cell, the reniform macula is distinctly pink, bordered with white and black inside, the undulate line is also pink. Hindwing brown. Paraguay.

melanodonta. **O. melanodonta** Hmps. (51 k). Forewing greyish-brown, strewn darker, somewhat lighter postmedianly and in the marginal area, with dark transverse lines, the posterior line double, filled and bordered with whitish, the small grey reniform macula is surrounded with brown, with a white dot below; a black apical spot behind the whitish undulate line. Hindwing brown. From Trinidad.

besidia. **O. besidia** Drc. Forewing dark brown with a purple grey reflection with dark transverse lines, the anterior line single, bordered with whitish on both sides towards the costal margin, the posterior line double, filled with white, with a black spot on the discal fold behind it; the narrow whitish reniform macula is surrounded with black, its lower end tied off in a small extra spot, the white undulate line shaded with brown inside. Hindwing dark red-brown. Expanse of wings: 24 mm. Mexico (Guerrero).

bettina. **O. bettina** Drc. is much smaller than the similar *besidia*, the transverse lines not bordered or filled with a lighter colour, but with red dots on each side at the costal margin, the reniform macula scarcely whitish, its

extended into a point; it chiefly differs in the very indistinct grey, not white undulate line. Expanse of wings: 18 mm. Mexico (Jalapa).

O. holophaea *Hmps.* (51 k) is as large as the preceding species, but much more monotonously dark, *holophaea*. strewn almost entirely black, both the transverse lines rather indistinct, double, not filled lighter, instead of the reniform macula with two white dots surrounded by a hardly darker colour, at the cell-end, the fine undulate line quite dark. Hindwing light brown, darkened at the margin. Argentina.

O. amazonica *Warr.* (= *apicata* *Schs.*) (51 k) is quite different, the forewing greenish-white, scantily *amazonica* strewn with brown, a brown triangular spot at the base of the costal margin and a large red-brown spot at the apex, with quite indistinct transverse lines, the anterior one punctiform, without any maculae; undulate line feebly shaded with brown inside. Hindwing light brown. Brazil (Castro: Amazons).

43. Genus: **Amyna** *Guen.*

This peculiar genus comprises somewhat larger dark species with very broad wings, a developed proboscis, erect palpi broadly scaled in front, with a long terminal joint, and a smooth frons; thorax scaled, tuftless, abdomen with tufts on the first rings; forewing with an areole and a regular Noctuid neuration, the median radial vein of the hindwing feebly developed. Beside numerous Indian species, a few American species are also known, most of which occur also in North America.

A. bullula *Grt.* (= *tecta* *Drc.*, *mexicana* *Strā.*) (51 k). Forewing copper-red, strewn with dark, more *bullula*. greyish-brown in the marginal area, with indistinct dentate transverse lines bordered with whitish, the maculae surrounded by whitish, the reniform maculae 8-shaped, the ♂ with a deep fovea instead of the ring-macula, an oblong fovea below the median vein; undulate line dark with a small whitish apical spot behind it. — As GROTE's original description only refers to specimens with a white reniform macula, those lacking the white colour must be named: — **concolorata** *B. & Benj.* Alabama, Texas, Mexico, Guatemala. *concolorata*

A. octo *Guén.* (= *stricta* *Wkr.*, *flavigutta* *Wkr.*, *perfundens* *Wkr.*, *cephusalis* *Wkr.*, *colon* *Guén.*, *vexa-* *octo*. *bilis* *Wallgr.*, *inornata* *Wkr.*, *obstructa* *Wkr.*, *stigmatula* *Snell.*, *albigutta* *Wkr.*, *bavia* *Fldr.*, *undulifera* *Btlr.*, *tecta* *Grt.*, *monotretalis* *Mab.*, *supplex* *Swinh.*, *rufa* *Beth.-Bak.*) (51 l). Forewing greyish-brown, more or less tinted reddish, with indistinct dentate transverse lines bordered with whitish, the strangulated reniform macula surrounded with whitish, the whitish undulate line being brown inside. A cosmopolitan species (cf. Vol. XI, p. 272) occurring also in America from Kansas and Texas to Paraguay and Argentina as well as in Jamaica, Grenada, and Trinidad. A variable species: — The form with a white-filled reniform macula is called **axis** *axis*. *Guén.* (51 l). — f. **orbica** *Mrr.* are specimens in which the marginal area is more intensely suffused with red- *orbica*. brown, and in — f. **leucospila** *Wkr.* the forewings are quite red-brown. *leucospila*.

A. amplificans *Wkr.* (= *impedita* *Wkr.*) (51 l) is the largest and strongest species with narrower fore- *ampli-* wings, copper-brown with black notched transverse lines, the reniform macula filled with white below; the *ficans*. ring-macula is indicated by 2 black dots; the dark undulate line is removed inwards at the apex, where there are 2 thicker black dots. Hindwing greyish-brown. Mexico to Venezuela.

A. tristis *Drc.* (51 l) is similar, with somewhat broader wings, more greyish-brown with a greasy lustre, *tristis*. the surroundings of the reniform macula very indistinctly marked by a few small white scales, the transverse lines hardly bordered with whitish. Hindwing greyish-brown. Mexico *).

44. Genus: **Bryocodia** *Hmps.*

Distinguished from the preceding genus by a rounded frontal projection with a horny plate below it and large loose tufts on the prothorax and metathorax, the abdomen scaled almost in its whole length, the middle radial branch on the hindwing stronger and arising below the centre. HAMPSON presumes *lepidula* *Grt.* to be the type of the genus, which species we have already described as *Agriopodes* (p. 31) to which genus it has been placed recently. We mention here also some tropical species which have meanwhile been described to belong to this genus.

B. pictula *Schs.* (51 l) has sap-green forewings, the centre of the costal margin strewn with white, with *pictula*. indistinctly double transverse lines filled with whitish, and a quadrangular black spot between the maculae which are surrounded with white and exhibit some carmine scales at their inverted margins; the whitish undulate line likewise shows carmine scales and is inwardly shaded with blackish-brown forming a spot below the costal margin. Hindwing greyish-brown. Brazil.

B. poasina *Schs.* (51 l). Forewing dark brown with a black median area and double black transverse *poasina*. lines filled with yellowish reddish-grey; a lead-coloured spot in the cell and another one below it, bordered

*) *teratophora* H.-S. has already been dealt with in the genus: *Agriopodes* (cf. p. 32) where it is better ranged.

with velvety black outside, the reniform macula reddish-grey, strewn with white; marginal area strewn with reddish with a blackish-brown subterminal shadow. Hindwing brownish-grey. Costa Rica.

- saniva.* **B. saniva** Schs. (51 l) has brown forewings dusted with reddish-yellow postmedianly and in the cell-end; the straight anterior transverse line is reddish-yellow with a violettish rusty brown shadow behind it; reniform macula light, strewn with yellow and red-brown, the posterior transverse line whitish, bordered with blackish-brown; a dark brown costal-marginal spot is before the apex, a distally widening dark line extends between the upper radial branches to the distal margin. Hindwing brownish grey. Costa Rica.
- mediana.* **B. mediana** Schs. (51 l) is similar to *poasina*, light red-brown with a black central area, double transverse lines filled with whitish, and a conical white spot laterally bordered with black, instead of the reniform macula; at the apex of the costal margin there is a black spot from which the undulate line of black dots proceeds. Hindwing light brown. Brazil (Castro, Paraná).
- lilacina.* **B. lilacina** Dyar (52 a). Forewing yellowish-grey at the base, dark violet in the lower half of the median area, distal area light violet with black transverse lines and a black wedge-spot before the light elliptical reniform macula; a larger spot at the costal margin before the dark undulate line. Hindwing light grey. Mexico.
- clinopetes.* **B. clinopetes** Dyar (52 a) is extensively loam-coloured in the basal and marginal areas, marked with red-brown, grey behind it, blackened at the costal margin; a white oblique blotch from the cell-end to the apex; transverse lines blackish, the posterior one double; a large whitish spot above the anal angle; maculae indistinct, reniform macula light, 8-shaped. Hindwing yellowish, darker at the margin. Mexico (Sinaloa).

45. Genus: **Prasinopyra** Hmps.

Proboscis developed, palpi erect with a long terminal joint, frons smooth. Thorax as in *Bryocodia*, the first abdominal segments tufted. Neuration as in the preceding genus with an areole on the forewing.

- metacausta.* **P. metacausta** Hmps. (52 a). Forewing light yellowish-green, mixed with whitish, with whitish indistinct transverse lines and black dots behind them; an oblique red and black costal-marginal band extends down between the maculae which are surrounded with whitish, single red dots are in the reniform macula; the whitish dentate undulate line is indistinct, with small red and black spots. Hindwing light hemochrome. Cuba.
- semifascia.* **P. semifascia** Dyar (52 a) has light grey forewings with a reddish tint in the anal portion, a black oblique band from the costal margin between the feebly whitish-ringed maculae, and a black subapical arcuate streak at the costal margin; single dots instead of the transverse lines. Hindwing yellowish-white, brownish at the margin. Mexico (Sinaloa).
- metaleuca.* **P. metaleuca** Schs. (52 a). Forewing silvery grey, feebly dusted with greyish-brown in the basal half; a red-brown angled stripe extends down between the large maculae which are close together, the posterior transverse line consists of a double row of dots, the interior ones being connected by a brownish-grey lunular line; a short blackish-brown stripe divides the apex, a brown costal-marginal shadow is before it; instead of the undulate line a brownish shadow and black vein-streaks. Hindwing white, brownish on the veins and margin. Costa Rica.

46. Genus: **Neocodia** Schs.

Distinguished from the preceding genus by the absence of the areole on the forewing in which the 4 lower subcostal branches arise on a common stalk, only the uppermost being separated; the tuft on the prothorax is absent, the abdomen shows tufts only on the two first segments.

- asna.* **N. asna** Schs. (52 a). Forewing white in the basal half with 2 brown lines and a shadow between them; distal half olive brown or brownish ochreous with a fine postmedian line which is bordered with a darker white; a black spot in the centre of the margin behind a black subterminal shadow. Hindwing greyish-brown. Costa Rica.
- albidivisa.* **N. albidivisa** Dogn. (52 a) is brownish in the basal area of the forewing, mixed with green towards the inner margin enclosing 2 white transverse lines; a broader white antemedian line separates the basal area from the brighter brown other part of the wing which is dusted with lilac in the central area; a black streak at the cell-end; the marginal third excepting the apex is darker brown. Hindwing brown, whitish towards the base. Ecuador (Loja).

47. Genus: **Chamyris** Guen.

Resembles the preceding genera on the whole. Thorax clad with very large scales, prothorax without a tuft, mesothorax with a double tuft, and metathorax with a loose tuft; abdomen tufted on the first segments, the tuft on the 4th segment being exceedingly large. Forewing with an areole, hindwing with a fully developed middle radial branch. Only two large North-American species:

Ch. cerintha *Tr.* (52 a). Forewing white, partly dusted with bluish-grey, with a broad bluish-grey and yellowish-brown antemedian band and marginal area; macula and treble median lines feebly traceable. Hindwing diaphanous white. Canada to Florida. — ab. **obscura** *Dyar* was based upon a small aberrative specimen with a darker median band of the forewing, almost as dark as the marginal area and with brownish-grey hindwings. — The green, dorsally purple brown larva with white subdorsal lines lives on wild cherry (*Prunus serotina*).

Ch. sirius *B. & McD.* (52 a) is very similar to *cerintha*, smaller, a larger white basal spot is in the brown antemedian band, the maculae are more distinctly surrounded by black, and there are four median lines which are very distinct particularly at the inner margin; the entire postmedian line is distally shaded with brown, and the undulate line is more dentate. Hindwing somewhat brownish at the margin. Texas.

48. Genus: **Argillophora** *Grt.*

Without a proboscis, but otherwise very similarly structured as *Chamyris*. Only 1 species:

A. furcilla *Grt.* (52 b). Forewing brownish ochreous with a flesh-coloured tint and scantily strewn with black, somewhat darker shadows along the median vein and obliquely from the apex, with a silvery white marking bordered with black inside and forked like a Y above, from the inner margin obliquely towards the apex. Hindwing yellowish-brown. Alabama.

49. Genus: **Argyropasta** *Hmps.*

The genus contains but one small species with a stunted proboscis, the scaled thorax is tuftless, the abdomen tufted to the end. Forewing rather long and narrow with a rounded apex, without an areole, the middle subcostal branch is absent, the 3 others stalked, only the uppermost separate.

A. thermopera *Hmps.* (52 b). Forewing blackish-brown, with lead-coloured and silvery scales, red-brown at the apex, the black posterior transverse line bordered with white on both sides towards the costal margin, the light undulate line is bordered with red-brown proximad. Hindwing red-brown. Brazil (Sa. Catharina).

50. Genus: **Micrantha** *Hmps.*

Proboscis developed, palpi porrect, long, with a triangularly shaped tuft of scales above, frons smooth; thorax scaled, metathorax with a loose tuft, abdomen with a row of tufts. Forewing with a rounded apex, an areole and a normal Noctuid neurulation.

M. mirabilis *Schs.* (52 b). Forewing yellowish-white, red-brown in the centre almost to the inner margin, enclosing the large whitish reniform macula which is centred red-brown and surrounded by brown; posterior transverse line double; the narrow marginal area blackish brown. Hindwing yellowish brown with a central dot and a curved line behind it. Brazil (Rio de Janeiro).

M. janeira *Schs.* (52 b) is the largest species with whitish forewings dusted with brown, with brown dentate transverse lines, the anterior line partly double, and with indistinct white-ringed maculae, the reniform macula extended below into 2 points; undulate line double, exterior line thicker and deep black. Hindwing light brown. Brazil.

M. cyclopis *Hmps.* (52 b) is the smallest species with brownish ochreous forewings strewn with black and dusted with silvery purple, with black transverse lines, the posterior line double, filled with yellowish ochre, and with yellow maculae surrounded by black, the reniform macula centred with black; the crenulated undulate line shaded with black inside. Hindwing greyish-brown. Panama.

M. mollita *Schs.* (52 b). Forewing pinkish-yellow in the basal area, grey in the median area and at the inner margin as far as the distal margin, brown above it; both the transverse lines are double, brownish, the posterior line filled with whitish at the costal margin; maculae green, a greyish-brown median shadow dusted with green between them, a white line behind the reniform macula; undulate line white in its upper half, yellowish-pink below, shaded with green inwards in the centre, with a brown spot behind it in the centre of the margin, fringe green. Hindwing brownish-grey. Costa Rica.

51. Genus: **Ortholeuca** *Hmps.*

Separated from the preceding genus by a rounded frontal projection, with a slightly raised margin on the tip; the scaled thorax is tuftless, the abdomen exhibits one tuft each on the 3rd and 4th segments. Only 1 species:

albiluna. **O. albiluna** *Hmps.* (52 b). Forewing coppery red, with no other marking but the narrow white reniform macula in the shape of a lunula surrounded by black, and the double posterior transverse line being filled with a pure white. Hindwing light coppery brown. Panama.

52. Genus : **Erastroides** *Hmps.*

Small slender Noctuids quite similarly built as *Chamyris*, but the forewing without the areole, the 4 lower subcostal branches arising on a common stalk, the uppermost arising separately from the cell.

emarginata. **E. emarginata** *Hmps.* (52 b). Forewing reddish-ochre, spotted white before the centre and behind the centre of the costal margin, strewn with black in the basal and marginal areas, with blackish transverse lines, without maculae. Hindwing blackish-brown. Mexico, Panama.

albiguttata. **E. albiguttata** *Drc.* (52 b). Forewing yellowish-green, all the 3 maculae white, the reniform macula prolonged to the costal margin, with black transverse lines, a white triangular spot behind the exterior line at the inner margin, the undulate line shaded with black inside. Hindwing brownish, darker at the margin. Described from Peru.

hermosilla. **E. hermosilla** *Schs.* (52 b) has light olive green forewings strewn with black excepting the marginal area, with double transverse lines connected by black on the submedian fold, the posterior line filled with white; median area dusted with red-brown, with a white stripe on the median vein, expanded at both its ends and confluent outside with the reniform macula which is surrounded with whitish; the white undulate line is marked black inside, with an indistinct larger spot below the costal margin. Hindwing greyish-brown. Brazil, Paraguay.

properea. **E. properea** *Grt.* (52 c). Forewing dark brown, dusted with grey, reddish ochreous in the marginal area; the anterior transverse line is indistinct, bordered with yellowish inside, the posterior line double, filled with white, the reniform macula centred with brown and surrounded with white, the whitish undulate line finely dentated. Hindwing brown. Arizona.

53. Genus: **Via** *Dyar.*

Proboscis developed, palpi slender, scaled below. the frons with a rounded conical projection; thorax and abdomen tuftless. Forewing without the areole, the uppermost and lowest subcostal branches free, the latter from the upper cell-angle, the 3 middle branches on a common stalk. Only 1 species:

vindicai. **V. vindicai** *Dyar* (52 c). Forewing lustrous purple brown, with yellowish-white transverse lines, the anterior one distinct, curved, the posterior one feeble, almost extinct in the centre. Hindwing bronze black. A very small insect with an expanse of but 10 mm. Panama.

54. Genus: **Prodosia** *Dyar.*

Separated from the preceding genus by the smooth frons, the last palpal joint being longer, one tuft each on the 1st and 3rd abdominal segments and an areole on the forewing. Likewise only one very small species:

mycha. **P. mycha** *Dyar* (52 c). The basal three fifths of the forewing yellowish-brown (probably green in the fresh specimens), purple black behind it, the two colours separated by a whitish line which is twice dentate below the costal margin; maculae absent, undulate line indented in the middle, more or less distinct. Hindwing blackish brownish-grey. Panama.

55. Genus: **Lithacodia** *Hbn.*

This genus contains a large number of small Noctuids of a most varied exterior, mostly of a rather slender structure with a developed proboscis, erect palpi, a smooth frons and scaled thorax, prothorax tuftless, mesothorax with two tufts and metathorax with a loose tuft, a series of tufts on the dorsum of the first abdominal segments, those on the 3rd and 4th being especially large. Forewing with an areole and a regular neuration, hindwing with a strongly developed middle radial branch. Larvae, as far as they are known, without the first prolegs, the second being rudimentary.

synochitis. **L. synochitis** *G. & R.* (52 c). Forewing white, purple brown postmedianly and at the costal margin, dusted with olive green in the median area and in some places behind it, with indistinct transverse lines filled with white, the maculae surrounded by white; undulate line indistinct white, some black streaks before it below the costal margin, behind the line we see the apex dusted with blackish. Hindwing brownish, darker at the margin. Canada to Texas.

phya. **L. phya** *Drc.* The purple grey forewing strewn with black exhibits a large white spot in the basal area in the inner-marginal half, with black transverse lines, the posterior one double, filled with white and reddish, and brownish-white maculae, the reniform macula large, quadrangular, white, strewn with brown in the centre; instead of the undulate line there are small black sagittate spots with red streaks from there to the margin. Hindwing brown. Mexico.

L. albidula Guén. (= *intraetabilis* Wkr., *cretiferana* Wkr.) (52 c) is a somewhat larger white species *albidula*. dusted with reddish-yellow, with reddish-ochreous transverse lines bordered with white, the maculae feebly surrounded with white, the undulate line being whitish, too. Hindwing yellowish-white. From New Found-land and Canada to California.

L. substellata Dyar (52 c) is very similar, the yellowish-white forewing is thickly strewn with brown, *substellata*. the transverse lines are somewhat lighter, only the exterior one somewhat more distinct, the reniform macula is composed of 2 white dots. Hindwing somewhat lighter than forewing. Mexico.

L. parvimacula Grt. (52 c) has quite light bluish-green forewings slightly strewn with red, with black *parvimacu-* double transverse lines filled with white, the maculae surrounded with white, the ring-macula black, the two *la*. others centred with rusty brown, with small black sagittate spots before the white undulate line. Hindwing light brown. Known from Texas.

L. concinnimacula Guén. (52 c) is very closely allied with *parvimacula*, it is somewhat deeper bluish *concinni-* green, the two maculae being centred red-brown in the preceding species are brightly centred here, the *macula*. transverse lines are not double but white, only one side of them scaled somewhat red, some red and black scales are below the cell-end, the small sagittate spots before the undulate line are red. Hindwing darker brown. Canada to Pennsylvania.

L. albopunctalis Drc. Forewing metallic coppery red-brown with double transverse lines filled with *albopunc-* whitish, the silvery white maculae surrounded with dark brown; instead of the undulate line a darker sha- *talis*. dowy stripe. Hindwing copper-brown. Guatemala.

L. bellicula Hbn. (= *semichalcea* Wkr.) (52 c) has red-brown forewings mixed with grey, the median *bellicula*. area below the cell of a brighter red-brown, postmedianly more yellowish; the double transverse line is filled with whitish and strongly introangular submedianly, the maculae are feebly marked whitish, undulate line yellowish. Hindwing copper-brown. Canada to New York and Colorado.

L. cuprea Schs. (52 c). The purple forewing is coppery red in the marginal area, with olive whitish trans- *cuprea*. verse lines bordered with deep red, the posterior line confluent with the reniform macula which is surrounded with whitish; undulate line only marked by the contrasting colours. Hindwing greyish-brown. Brazil.

L. mella Schs. (52 d) is a pretty and common little insect, easily recognizable: white, greyish-green *mella*. in the median area and before it, with broad white transverse lines and orange-red or scarlet spots in the basal area, in the maculae and before the undulate line, as well as a similarly coloured submedian stripe connecting the transverse lines. Hindwing white. Brazil.

L. jora Schs. (52 d). Forewing light olive green, darker in the median area below the cell, spotted blackish- *jora*. brown at the costal margin, the maculae surrounded with white, the reniform macula is only a brown streak in a very large white area, with brownish transverse lines, the posterior line broadly bordered with white; a large olive green spot in the centre of the blackish-brown marginal area. Hindwing brownish-grey. Costa Rica.

L. folium Schs. (52 d) is likewise light green on the forewing, blackish-brown in the median area, behind *folium*. the cell and in a large spot in the centre of the marginal area, with olive green and brown transverse lines, with a line of dots behind the exterior line; ring-macula olive green, reniform macula only a curved brown line; undulate line whitish green. Hindwing blackish-brown. Costa Rica.

L. atrinotata Hmps. (52 d). Forewing olive green, dusted with reddish-brown especially in the median *atrinotata*. area and behind it, with somewhat faded transverse lines, the posterior line partly white; the ring-macula is a small black spot, the reniform macula a small whitish spot scaled black inside; the lower two thirds of the undulate line are thick white, a black ray extends from it to the margin. Hindwing reddish brown. Brazil.

L. chlorophila Hmps. (52 d). Forewing olive green, mixed with white and strewn with red-brown, with *chlorophila*. double darker green transverse lines filled with whitish, a black spot between the maculae which are surrounded by whitish, the latter spot continued by the faded median line, the reniform macula strangulated and inwardly prolonged on the median vein; blackish before the undulate line. Hindwing brownish. Brazil.

L. glauca Hmps. (52 d) has reddish olive green forewings striped purple grey on the median and inner- *glauca*. marginal vein, with black transverse lines bordered with white on the averted sides, the white maculae surrounded with blackish, small black sagittate spots before the undulate line. Hindwing purple reddish brown. Jamaica.

L. musta G. & Rob. (52 d). Forewing olive green, strewn with black, dusted with red-brown in the distal *musta*. half of the median area, with black transverse lines bordered with red-brown and whitish, the posterior line more distinctly double; all the 3 maculae centred with red-brown and surrounded with whitish, also the coniform macula in a broad white ring, a black discal streak behind the reniform macula; undulate line composed of small white, inside black sagittate spots. Hindwing greyish-brown. United States (Eastern and Central States). — ab. (?) **costaricana** Strd. (= ab. 1. *Hmps.*) shows the whole median area black and purple grey. Costa Rica. *costaricana*.

L. mustapha Dyar (52 d) is plainly grey, without any green tint, the whole subterminal area extensively *mustapha*. whitish, otherwise very similar to *musta*, remarkable for the coniform macula being semicircularly surrounded by white. Hindwing light grey. Mexico.

- sirbena*. **L. sirbena** Dogn. (52 d). Forewing blackish-brown, strewn lighter with a moss-green tint, the black transverse lines bordered with white on the averted sides; maculae as in the coniform macula likewise semicircularly surrounded by white; a subterminal white-strewn marking at the inner margin and at the costal margin. Hindwing lustrous grey. Argentina.
- carneola*. **L. carneola** Guén. (= biplaga Wkr.) (52 d) has light reddish-grey forewings, dark brown in the basal area and in a large costal-marginal spot in the median area, with double transverse lines filled with white, the maculae surrounded with black; undulate line white. Hindwing light reddish-brown. Canada to New York and Illinois. — Larva green, subdorsally blackish with white longitudinal lines.
- apicosa*. **L. apicosa** Haw. (= nigrifera Guén., undulifera Wkr.) (52 e). Forewing brownish-black, strewn with grey, reddish white at the margin, with black transverse lines bordered with whitish pink, the brown maculae surrounded by white; the pinkish-white undulate line is accompanied inside by a red-brown band. Hindwing yellowish-brown. Canada to Pennsylvania and Florida, also in Cuba.
- minuta*. **L. minuta** Drc. Forewing red-brown with a silvery gloss, basal area and median area at the costal margin black and lead-coloured, with black transverse lines, the anterior one double and filled with white; the maculae are surrounded with whitish, the narrow oblique ring-macula extending far below the cell; the strongly dentate brownish undulate line is very near to the posterior transverse line, the marginal area behind it is silvery white and divided into 3 spots by a red-brown marginal line which projects twice far inwards. Hindwing diaphanous white, margin and veins brownish. Guatemala.
- editha*. **L. editha** Schs. (52 e) has a red-brown basal half and olive whitish distal area, double black anterior transverse lines filled with light pink, and a broad olive brown posterior transverse line which is white outside; an olive band before the undulate line; only the ring-macula is present, forming a dark dot. Hindwing coppery brownish. Mexico.
- henita*. **L. henita** Schs. (52 e). Forewing blackish-brown, mixed with red and grey, in the marginal area whitish with light brown, with black transverse lines, the anterior line bordered with whitish, the posterior line double with small yellowish-white maculae, the reniform macula hollowed out towards the base; dusted red-brown before the white undulate line, with a black spot on the discal fold behind it. Hindwing dark brown. Brazil.
- muscosula*. **L. muscosula** Guén. (52 e). The white forewing is dusted with olive green and strewn with black, white in the postmedian area, greyish-brown in the marginal area, with double transverse lines filled with white, the maculae surrounded with white, the ground of the cell between them is blackened, the undulate line white. Hindwing white, brownish inside, darker brown in the ♀. Canada to New York.
- veternosa*. **L. veternosa** Schs. (52 e) has blackish-brown forewings with black transverse lines bordered with reddish-yellow; the ring-macula is a white dot, the reniform macula a brown streak bordered with white on each side, inside narrowly, outside broadly; the undulate line is an irregular black shadow. Hindwing greyish brown. Costa Rica.
- syggenes*. **L. syggenes** Hmps. (52 e) is grey on the blackish-brown forewing, mixed with ochre and red-brown, with double black transverse lines filled with grey and ochre, lighter white and ochre behind the exterior line in the lower half, with whitish maculae centred with brown, the reniform macula produced somewhat basad on the median vein; undulate line whitish. Hindwing yellowish-white with a central dot and a curved line behind it. Peru.
- onytes*. **L. onytes** Schs. (52 e) is somewhat similar to *syggenes*, but darker and without the white brightening behind the postmedian line; the blackish-brown forewing with a bronze gloss, the maculae feebly surrounded with whitish. Hindwing reddish brown. Brazil.
- penthis*. **L. penthis** Schs. (52 e). Forewing olive brown, strewn with black, with a large whitish-ochreous inner-marginal basal spot; only the posterior transverse line is more distinct, double, filled with whitish, the maculae are yellowish-white, surrounded by black, the reniform macula below prolonged proximad; the postmedian area before the white undulate line is of a purer olive brown. Hindwing yellowish-brown. Mexico (Guadalajara).
- valta*. **L. valta** Schs. (52 e) is recognizable by the forewings being dusted with bluish-grey slate-colour, the upper part of the median area being red-brown only at the margin; anterior transverse line grey, accompanied outside by a black band, the posterior line double, filled with white, connected with the anterior line by the black band; the white maculae are centred-brown, the reniform macula below produced somewhat proximad; before the white undulate line there are below the costal margin black sagittate striae, the tip being divided by a black oblique streak. Hindwing reddish-brown. Mexico (Guadalajara).
- geoga*. **L. geoga** Schs. (52 f) is an insignificant small grey insect strewn with blackish-brown, with fine black transverse lines, the posterior line being bordered outside with reddish ochre, the maculae finely surrounded with black; the whitish undulate line is shaded with blackish-brown inside. Hindwing reddish-brown. Mexico.
- merta*. **L. merta** Schs. (52 f) is the largest species, blackish-brown with a broad yellowish-white antemedian band extending along the inner margin to the base, with indistinct double finely dentate transverse lines;

only the reniform macula is present, surrounded by black, strangulated in the middle; the undulate line is composed of black streaks marked grey outside. Hindwing dark coppery brown. Brazil.

L. mesophoenica *Dogn.* (52 f). The forewing is yellowish-white at the base, behind it follows a broad lilac grey antemedian band, edged by 2 black lines which are finely bordered with ochre, the exterior one ovals comprising the cell-end; behind it the wing is brown, dusted with lilac behind the exterior transverse line and traversed before the margin by 2 indistinct lighter lines. Hindwing coloured and marked almost the same. French Guiana. *meso-phoenica.*

L. mirella *Schs.* (= *hippotamada* *Drc.*, part.) (52 f) is monotonously blackish-brown with a coppery reflection; only a very indistinct posterior blackish transverse line is bordered with white outside, and there are traces of a lighter undulate line with a small white costal-marginal spot. Hindwing blackish-brown. Mexico Guatemala. *mirella.*

L. homopteridia *Schs.* (52 f) has dark brown forewings with velvety black double marked transverse lines between which there is an irregular median shadow with a large cellular spot behind it and a white dot at the lower cell-end; undulate line dark greyish-brown, shaded with blackish-brown inwards. Hindwing blackish-brown. Costa Rica. *homo-pteridia.*

L. xemiloca *Dyar* (52 f) is orange brown on the forewing, the basal portion as far as a vertical line a little behind the centre covered with erect scales exhibiting a peculiar purple reflection; the broad undulate line is composed of similar scales, the margin behind it is narrowly brown. Hindwing blackish, lighter and more yellowish towards the base, with a black marginal line and the fringe white at the end. Mexico (Colima). *xemiloca.*

56. Genus: **Stenocodia** *Hmps.*

Without a proboscis, palpi slender, erect, frons smooth, the ♂ antennae ciliated in long tufts, the scaled thorax tuftless in front, with a loose tuft behind; abdomen with a tuft only on the first segment. The long narrow forewing lacks the arcole, the 4 lower subcostal branches arise on one stalk. Only 1 species:

St. purpurascens *Hmps.* (52 f). Forewing purple red mixed with yellowish, indistinct transverse lines, the anterior one single, very oblique, the posterior one double, filled with lighter pink. Hindwing brownish-grey, with a feeble purple tint in the marginal area, a blackish central dot and a curved line behind it. French Guiana. *purpurascens.*

57. Genus: **Paracretonia** *Dyar.*

Very closely allied to the genus *Phyllophila* from which it merely differs in the entirely tuftless abdomen.

P. aleptivoides *B. & McD.* (= *xithon* *Dyar*) (52 f). Forewing light grey with a broad dark oblique band from the costal margin to the coniform macula and an ochreous patch below it; maculae white, centred with black dots, the coniform macula large; posterior transverse line double with an ochreous band behind it, traversed by the grey veins. Apex parted by an oblique white blotch. Hindwing greyish-brown. California. *aleptivoides.*

58. Genus: **Amiana** *Dyar.*

Separated from the preceding genus by much shorter palpi, loose tufts on the prothorax and metathorax, and an abdominal tuft. The middle radial branch on the hindwing is somewhat feebler. Only one somewhat larger species.

A. niama *Dyar* (52 f). Forewing blackish-brown mixed with grey, reddish ochreous at the base of the inner margin and spotted at the anal angle, with black transverse lines, the posterior one bordered with whitish outside, the small maculae surrounded with light, the reniform macula strangulated, a black median shadow before it; the whitish undulate line is shaded with blackish inside. Hindwing blackish-brown. Arizona. *niama.*

59. Genus: **Cryphia** *Hbn.*

This genus named *Hyperstrotia* by HAMPSON has a developed proboscis, erect palpi with a short terminal joint, a smooth frons, a scaled tuftless thorax and a tuft on the first abdominal segment. Forewing without an areole, the three lower subcostal branches are stalked, the two upper ones free.

C. nana *Hbn.* (= *aethetica* *Grt.*) (52 g) has white forewings dusted with red-brown in the interior area as far as the postmedian line and from here above the cell-end obliquely to the apex, with some costal-marginal spots between the fine black transverse lines; 2 black dots at the cell-end; the undulate line is shaded with brownish inside. Hindwing reddish-brown. Florida. *nana.*

pervertens. **C. pervertens** B. & McD. (52 g). Forewing dark grey, mixed with a lighter colour, with feeble darker transverse lines, a dark costal-marginal spot before the anterior line, a narrow reniform macula surrounded with whitish and centred with 2 black dots. Undulate line indistinct. Hindwing brownish-grey. Pennsylvania, New York in June, July.

villificans. **C. villificans** B. & McD. (52 g) is similar to *pervertens*, of a deeper more contrasting, colouring, the averted sides of the transverse lines bordered with white, the anterior line more strongly notched, more oblique towards the inner margin, the lower half of the median area shaded somewhat brownish, with an oblique whitish apical shadow; undulate line more irregular. Pennsylvania, New Jersey, in July and August.

oletta. **C. oletta** Schs. (52 g). Forewing red-brown in the basal half, dusted more with grey outside, a whitish cellular spot behind the anterior white transverse line, then follows a faded oblique red-brown median line with a black streak on the submedian fold, the posterior line is blackish, the oblique reniform macula is centred and surrounded with whitish; undulate line faded, red-brown. Hindwing reddish-brown. Brazil.

60. Genus: **Protocryphia** B. & McD.

Extraordinarily similar to the preceding genus from genus which it only differs in the constant presence of a small areole, the lowest subcostal branch being distinctly stalked with the two next branches. Only 2 species which had hitherto been ranged as *Eustrotia*.

flaviguttata. **P. flaviguttata** Grt. (52 g). Forewing light purple brown, scantily strewn with black, with rather indistinct transverse lines, the posterior line double, its interior portion more distinctly black; at the cell-end there are 2 black dots surrounded by grey, a feeble red-brown median shadow is in front of the posterior transverse line, spotted yellow on the median vein and with smaller spots on the inner-marginal vein; the very indistinct light undulate line is feebly shaded with brown inside. Hindwing greyish-brown. Florida, Texas.

secta. **P. secta** Grt. (52 g). Forewing violettish-white, dusted with purple brown, with faint dark transverse lines, the posterior one bordered with white outside, with 2 black dots in grey rings at the cell-end, a large blackish spot in the centre of the inner margin; the whitish undulate line is bordered with brown inside, with a larger spot at the costal margin. Hindwing greyish-brown. Massachusetts, New York.

61. Genus: **Brabantia** Dyar.

Very closely allied to the following genus, distinguished by the origin of the middle radial branch of the hindwing being removed more into the centre of the cross-vein. Only one species the position of which has changed several times; ROTHSCILD even described it as a Notodontid (*Dyas*).

rhizoleuca. **B. rhizoleuca** Brab. (= *melanoleuca* Rothsch.) (52 g) has sooty blackish-brown forewings with a purple reflection, the base of the inner margin broadly purely white like the thorax; the wing is traversed by numerous indistinct dentate transverse lines which are broken up into dots, the double postmedian row is somewhat more distinct; 2 black subterminal spots at the apex, one at the anal angle. Hindwing white with a blackish-brown marginal band. French Guiana.

62. Genus: **Eustrotia** Hbn.

The genus contains numerous small species of quite the same structure as *Lithacodia*, but the abdomen exhibits only one tuft on the first ring. The genus ought to be called *Erastria* Ochs., since in 1826 CURTIS fixed *uncana* L. as the type of this genus which had been established already in 1816, whereas *Eustrotia* Hbn. was only established in the year 1827.

chuza. **E. chuza** Drc. (52 g) and the two following species exhibit a much longer last palpal joint which is just as long as the middle joint. Forewing red-brown, dusted with purple grey, with double transverse lines, the posterior one extended to white and black dots on the veins, the maculae in light reddish-brown rings and finely surrounded with black; the whitish indistinct undulate line is shaded with a darker brown inwards. Hindwing reddish-brown. Mexico.

mochensis. **E. mochensis** Schs. (= *cassida* Dyar) (40 c) we had already treated upon among the *Amphipyridae* (p. 281), according to Dyar it belongs to this place here.

pulmona. **E. pulmona** Dyar with likewise long palpi is allied to *mochensis*. Forewing dark reddish-grey with a blackish, centrally angled median band, edged by the fine black transverse lines; a black dot in the centre of the cell, a lunula at its end; undulate line finely dentate with small light spots. Hindwing almost black with a lighter postmedian line and reddish fringe. Mexico (Jalapa).

E. lixiva Grt. (= numa Drc. part.) (52 g) like the following species, has shorter palpi and is faintly *lixiva*. ochreous reddish on forewings slightly peppered with blackish and with a large narrow cuneiform black-brown mark in central area. This is conjoined with a costal spot by a thin streak. Both are outlined delicately by black with silvery white edges. The two transverse lines are barely indicated, brownish, the subterminal line is more darkly shaded and there is a blackish costal spot in front at the top. Hindwings brownish. Arizona, Mexico (Durango).

E. basicinerea Grt. (52 h) differs from the previous species by a grey basal half, browner outer half and *basicinerea*. a somewhat more narrow velvety black central band, that is not expanded to the same extent, especially at inner margin and which is conjoined at costa with 2 smaller spots. Reniform stigma is larger and paler. Arizona.

E. antonita Dyar (52 h) closely resembles the previous and subsequent species. Basal area of forewings *antonita*. pale grey, outer area reddish brown, the two colours being separated by a narrow black band that extends to the costa. It is concave in the cell and below, so that a dentation is formed in the centre towards the base on the inner side. This may be interrupted on submedian. Reniform stigma with paler surround. Hindwings blackish brown. Texas.

E. orthozona Hamps. (= santarita Dyar) (52 h). Differs from the preceding by the ochreous grey basal *orthozona*. area, the outer area is only slightly less reddish, the middle band is wide with fine silvery white edge, slightly narrower in the cell, inner margin slightly incurved below cell. Hindwings reddish grey-brown. Texas.

E. anita Dyar (52 h) forms a group of closely related species with the preceding and following forms *anita*. and they are difficult to differentiate. Basal area pearly grey, the narrow central band is somewhat constricted in cell and on inner marginal nervure and is edged with whitish. Outer area dull brownish. Costa spotted alternately ochreous and black. Reniform stigma circular and ochreous. Subterminal line heavily undulate and ochreous with dark spot on inner side on costa. Posteriorly a fine black marginal line. Fringes grey. Hindwings yellow-grey. Mexico (Orizaba).

E. victrix Dyar (52 h). The black central band is wider, more deeply incurved twice on inner side and *victrix*. with faint and paler edge. Outer area ochre-yellow, dusted with olive-grey. Reniform stigma large, ochreous free of olive-grey dusting. The partially obsolete subterminal line is dark, it commences at a triangular costal spot and has 2 more distinct projections. Fringes black, intersected with ochreous in centre and subapically. Hindwings brownish. Mexico (Orizaba).

E. inveterata Dyar (52 h). The entire forewing is more monotonous, darker grey, the outer area being *inveterata*. the same colour. The curved central band wide to middle of cell, contracting from there and being very narrow at costa. Margin and fringes narrowly black, intersected in centre by grey. Reniform stigma a dark dot. Of the subterminal line only a dark subapical spot is present. Hindwings grey-brown. Mexico (Tehuacan).

E. melor Dyar (52 h). Basal area grey, outer area ochreous, shaded with blackish beyond the some- *melor*. what paler elliptical reniform stigma. The black central band is very wide, contracting towards the costa, outwardly somewhat concave in centre, edged on both sides with silvery white. The irregular pale subterminal line is situate in the dark marginal shading, which becomes gradually darker until dissolving into the black fringes. Hindwings whitish in ♂, grey in ♀. Mexico (Cuernavaca, Morelos).

E. melorista Dyar (52 h) differs from the preceding species by the somewhat darker grey basal area, *melorista*. a fine orange line anterior to the white inner edge of the wide central band. Outer area is orange with a brown dusted margin in which the silvery white subterminal line is situated. Anteriorly on costa there are two minute black spots with a further one on submedian. Fringes dark grey with a pale patch in centre. Hindwings monotonous black-brown. Mexico, Guerrero (Iguala).

E. dissociata Dyar (52 h) is somewhat larger than the preceding, paler grey in basal area, clay-yellow *dissociata*. in the outer two thirds. A triangular blackish spot at base of costa with a further smaller and more narrow spot posteriorly. Central band wide, widely triangular on costa, constricted in cell, becoming extremely narrow at inner margin. Reniform stigma is a pale ellipse in nebulous grey and with grey centre. On margin 2 olive-grey nebulous patches. Hindwings dark grey. Mexico (Tehuacan).

E. lixinities Dyar (52 h). Pale grey at base, the black central band very wide at inner margin, terminating *lixinities*. suddenly in cell in a rounded point. Outer area ochre, peppered with grey outwardly and with pale circumscribed reniform stigma. The black subterminal line is widest at costa, marginal line pale. Fringes black in centre and at anal angle. Hindwings grey. Mexico (Oaxaca).

E. megaplaga Dyar (52 i). Grey shaded with olive-brown. The black central band is developed into *megaplaga*. a large almost quadrate inner marginal spot, to which a more or less pronounced dark triangular costal spot is joined outwardly at its apex. Reniform stigma with pale centre having up to 3 dark dots. The faint pale subterminal line has a very wide dark shade inwardly. On margin there are 2 protracted dark semicircular marks. Hindwings grey-brown. Mexico (Tehuacan).

- dividua*. **E. dividua** Grt. (= *opipara* H. Edw.) (52 i). Forewings dark brown at base, admixed with reddish. Outer area blue-grey peppered with brownish and with two indistinct transverse lines with grey-white edges. The dark basal area is outlined by a black undulate central line. A black streak at close of cell. Before the margin there is a very narrow brown band, that expands on the two folds. Hindwings pale reddish brown. The ♀ is more reddish ochre in outer area, the transverse lines are outlined with silvery white. Texas.
- plumbifusa*. **E. plumbifusa** Dyar (52 i) is a large species. Grey, dusted with brownish outwardly with a wide dark leaden grey band that is extended inwardly to a point on the inner marginal nervure with pointed inlet outwardly on the mediana. Posteriorly a widely separated double dentate postmedian line. The black-brown sharply dentate subterminal line is dusted with white at top on costa. Hindwings grey-brown. Mexico (Tehuacan, Puebla).
- concava*. **E. concava** Dyar (52 i). Forewings dark lilac-brown in basal area with prominent contrasting claviform stigma. Outer area pale grey-brown edged by a line that is angulated at lower angle of cell and which proceeds from there closely in front of the posterior transverse line. Reniform stigma, shaped like a pale comma, is circumscribed in an arc by the pale, black dotted postmedian. Posteriorly there is a dark quadrangular subapical spot from the lower end of which the dark subterminal line arises. The fringes dark with pale patches subapically and in centre. Hindwings dark grey-brown. Mexico (Colima).
- longena*. **E. longena** Schs. (52 i) is reddish grey-brown on forewings, darker in central and apical areas with faint blackish transverse lines, the posterior one being double. Reniform stigma with whitish ring and black surround and centre. Anterior to the grey indistinct subterminal line, there are small black sagittate marks. Hindwings dark coppery brown. Venezuela.
- mesosecta*. **E. mesosecta** Dyar (52 i). Forewings olive-brown to centre, in outer area reddish brown. The small black crescent shaped reniform stigma is situate behind the whitish central line that extends vertically and is faintly curved and somewhat angulated in the submedian. The irregular dentate subterminal line is blackish. Hindwings grey-brown, darker towards the margin. Mexico (Zacualpan).
- retroversa*. **E. retroversa** Dyar (52 i). Forewings yellowish in basal half, dusted with brown in centre, deep reddish brown outwardly. A black dot in basal third of inner margin. The whitish central line is faintly curved. A pale angulated subterminal line is only partially discernible. Hindwings grey-brown, darker towards margin. Mexico (Zacualpan).
- cataea*. **E. cataea** Drc. Forewings yellowish white, deep brown in marginal area. Anterior faintly undulate transverse line is brown, the posterior line is double, interfilled with white, deeply angulated inwards on submedian fold. A nebulous black-brown central shade between a black spot in centre of cell and reniform stigma, which is merely a streak. Subterminal line scarcely discernible. Hindwings coppery brown. Guatemala.
- semiglauc*. **E. semiglauc** Dyar (52 k). Thorax and two-thirds of base are pale green. Outer area deep brown, the border of the two colours extends from before the anal angle straightly to centre of cell, from there rectangularly outwards and returning to costa. A dark spot in cell and two others at base of costa and inner margin. Hindwings grey-brown. Mexico (Sinaloa).
- roseoviridis*. **E. roseoviridis** Schs. Forewings pale green, brown in basal area admixed with lilac. The wide violet marginal area intersected by 2 brown shades, anterior to which there is an olive-green shade. The outer margin itself is narrowly pale green. At close of cell there is a large outwardly whitish spot encircled by deep red surround. Hindwings grey, shaded with brown outwardly. Costa Rica.
- cnossia*. **E. cnossia** Drc. (52 k). Forewings whitish dusted with brown, darker in central area with a triangular marginal spot. Indistinct double transverse lines interfilled with white and with dark streaks on veins posteriorly. Cell is brown between the stigmata that have white circumscriptions and it is intersected by a white streak lengthwise along the discal fold. There is brown dusting with darker streaks through the centre, anterior to the indistinct pale subterminal line. Hindwings reddish brown. Arizona, Mexico.
- obliquilinea*. **E. obliquilinea** Schs. is related to the preceding species. Forewings dark olive-brown, a streak in and below cell. Inner marginal area paler. A wide oblique white line extends from costa near the base to just before the anal angle. In the cell it is traversed by an olive-brown line. Outer third dusted with black-brown. The delicate posterior transverse line is white. Subterminal shade brownish black. Hindwings grey-brown. Costa Rica.
- olenos*. **E. olenos** Schs. Forewings slate-brown, streaked with reddish towards the margin. Whitish transverse lines with darker edges, the anterior line double in centre and shaded with reddish towards inner margin. Pale grey reniform stigma is speckled with white. The delicate whitish subterminal line is shaded with brown inwardly. Hindwings grey-brown. Costa Rica.
- astydamia*. **E. astydamia** Schs. (52 k). A larger species, dark brown dusted with grey with brown transverse lines edged on both sides with grey. Stigmata with grey surrounds, reniform stigma extended inwards on the mediana. Before apex there is a large black-brown triangular spot on costa. Subterminal line grey. Hindwings coppery brown. Brazil (Castro).

E. asteria *Drc.* The brown forewings have round lilac-white speckles in basal area, lower half of central area and towards apex. Transverse lines consist of rows of white dots, the outer line being edged inwardly by black lunules. There are also rows of white dots subterminally and at margin, in centre of cell there is a spot and at close 2 spots ringed with brown. Hindwings brown. Mexico (Tabasco).

E. deltoidalis *Dyar.* Forewings dark brown, dusted with red especially below apex. Transverse lines narrow and black with straight shaded black central line. Stigmata with black centres. A dark subterminal shade just before the margin. Hindwings grey-brown. Mexico.

63. Genus: **Eulocastra** *Btlr.*

There are only 2 american representatives of this almost purely indo-australian Genus. It is similar to the preceding but thorax and abdomen are entirely devoid of crests. In all other respects they are identical.

E. chrysarginea *Schs.* (52 k). Forewings coppery brown with leaden silvery sheen, especially in discal area. Fine double black transverse lines interfilled with golden yellow, the posterior line obsolete in centre with a golden brown shade anteriorly. A white dot at apex. Hindwings dark coppery brown. The coppery brown abdomen is ringed with white on the second and last segments, whilst the first three segments have white spots ventrally. Brazil.

E. ecphaea *Dogn.* Forewings grey-brown, paler in disc and at inner margin. A wide white oblique band extends from the second third of inner margin to the apex, where it is peppered with brown. Hindwings grey-brown. French Guiana.

64. Genus: **Cerathosia** *Sm.*

This Genus differs considerably, superficially it reminds one of certain *Cydosia* species with long narrow forewings with appendicular cell and normal neurulation. Proboscis is absent, palpi porrect, short. The frons has a beaker shaped corneous process within a ringed ridge and curved horny plate below. Thorax and abdomen are scaled and without crests. The anterior tibiae with short corneous spine outwardly at the extremity.

C. tricolor *Sm.* (52 k). Forewings silvery white with numerous black striations, that more or less form distinct transverse rows. Hindwings pale yellow. Texas, Mexico. — Larva is dark brown or black with 14—20 warts on each segment, each with 1 or 2 stiff bristles that are expanded at the tip. Both the anterior abdominal pairs of feet are missing.

C. opisthochra *Dyar.* The classification here is doubtful. Unfortunately both the anterior legs are missing in the type. Forewings pale rosy grey with grey-brown shaded band beyond the cell. forming here 2 blunt indentations. Hindwings orange-ochre. A small species of only 11 mm wing expanse from Mexico (Tehuacan).

65. Genus: **Monocymia** *Hamps.*

Proboscis developed, palpi upturned, frons smooth. Vestiture of thorax consists of hairs intermingled with scales. On metathorax there is a crest pointing backwards, abdomen without crests. Forewings wide with a small appendicular cell and the usual Noctuid neurulation, the median radial of hindwings is fully developed and arises below the centre of disco-cellular nervure.

M. harmina *Schs.* (52 k) has grey-white ground peppered with black and dusted with olive-grey. Both transverse lines are double, interfilled with white. The anterior line is very faint, the posterior one more distinct and wide with a coppery reddish shade posteriorly. Stigmata absent. Hindwings coppery dark brown. Brazil and Paraguay.

66. Genus: **Cymonia** *Dyar.*

Differs from the preceding by a large corneous plate with raised edge that covers the entire frons to the antennae and in which there is a large round central process. The only species described reminds one of the preceding.

C. harminella *Dyar.* Forewings pale yellowish grey. Marginal area widely olive-brown with boldly curved inner edge, that is parallel to outer margin. Hindwings dull reddish brown. Mexico (Sinaloa).

67. Genus: **Diastema** *Guen.*

This Genus embraces some pretty species that resemble the preceding Genus in structure. Palpi are somewhat longer and sleeker. Frons has a small rounded protruberance with a corneous plate below. Pro- and metathorax and the first segment of abdomen have loose tufty crests. Build generally is sleek. Neurulation normal with appendicular cell.

- tigris*. **D. tigris** *Guen.* (= *lineata* *Wkr.*) (52 k). Forewings yellowish white, dusted with brownish and numerous rusty red transverse lines. A large quadrangular deep brown spot, edged with white, between the stigmata and a wide lilac nebulous streak behind the cell. Hindwings pale yellowish. Mexico to Colombia and Venezuela.
- morata*. **D. morata** *Schs.* (52 l). Forewings white with deep reddish hue with sharply outlined oblique coppery brown in apical half. Transverse lines double, indistinct, interfilled with white. Blackish cell spot between the stigmata that have white surrounds and which are conjoined by white over the mediana. Black sagittate marks anterior to the whitish subterminal line. Mexico (Coatepec).
- dosceles*. **D. dosceles** *Dyar* (52 l). Forewings bright reddish, costa brown, dusted with lilac grey in marginal area with fine brown transverse lines, the anterior one displaced almost to centre, double; the posterior line three-fold and obtusely crenulate. Between this line and the wide black-brown central shade, a large rose coloured-reniform stigma which is joined to costa by a patch of the same colour. Hindwings yellowish. Mexico (Zacualpan).
- panteles*. **D. panteles** *Dyar* is rose-grey, paler at base, blackish at costa. Anterior curved transverse line cuts off a small segment both from the orbicular and claviform stigmata that have pale surrounds. Posterior to these there is a deep black oblique shade from the costa to claviform stigma. Posterior to the reniform stigma which is finely black and protracted with brown concentric surround, there is a finely black crenulate postmedian. A deep black shade extends before the twice angulated subterminal line. Hindwings grey-brown. Mexico (Tehuacan).
- argillophora*. **D. argillophora** *Dyar* has a more protuberant process on frons than the other species and forewings are slightly excurved below apex. Pale straw yellow, whitish yellow at base and with a finger shaped dark brown extension in centre of wing. Postmedian yellow-white with brown inner edge conjoined to apex by a white oblique streak having a wide deep red-brown shade posteriorly. Hindwings outwardly deep crimson-brown-grey. Panama.

68. Genus: **Chobata** *Wkr.*

Structure as *Diastema*, but thorax covered solely with scales. There is only one species:

- discalis*. **Ch. discalis** *Wkr.* (= *concludens* *Wkr.*). Forewings white, dusted with golden brown and copper and sparsely peppered with black. Transverse lines double interfilled with white, with white oblique line from the outer line to the margin along the submedian fold. The stigmata are white spots conjoined with white along the mediana, between them there is a U-shaped black line. An oblique whitish streak extends from reniform stigma to apex. Subterminal line with dark inner shade. Hindwings whitish, shaded with coppery brown at margin. Cuba, Haiti.

69. Genus: **Exyra** *Grt.*

Biologically a remarkable little group, as the larva inhabits the can-shaped trap of the insectivorous plant *Sarracenia* without being harmed by the digestive juices. The imago is of similar structure to *Diastema*. Frons with an almost beak-like process covered with rough hairs. Thorax with coarse hairs, intermixed with spatulate scales and without crest. Abdomen long and also without crests.

- rolandiana*. **E. rolandiana** *Grt.* (52 l) has deep crimson-brown forewings with a large yellow spot in central area from the middle of cell to inner margin. Transverse lines very indistinct. In ♀ marginal area is grey-brown. Hindwings dark brown. East, middle and central States.
- fax*. **E. fax** *Grt.* Head and thorax orange-yellow. Forewings brownish black peppered with orange. The speckles form 2 spots in the cell. Hindwings brown-black. Delaware, Georgia. A very small species of only 12 mm wing expanse.
- ridingsi*. **E. ridingsi** *Riley* (= *nigrocaput* *Morr.*) (52 l). Forewings orange-yellow with brown marginal area, widely diffuse central shade and wide anterior transverse line. The posterior transverse line is only separated from margin by very fine ochreous dusting. Hindwings glossy brown, yellowish at base. Central and southern States, Texas. — The larva feeds on *Sarracenia*.
- semicrocea*. **E. semicrocea** *Guen.* (52 l) The largest species, glossy black, orange in basal half. Hindwings black-brown, pale yellow at base. Middle, central and southern States. — ab. **hubbardiana** *Dyar* from Florida has grey marginal area with prominent wide dark central and subterminal bands. — ab. **immaculata** *Benj.* has a unicoloured grey marginal area without the dark bands. There are all sorts of transitions between these forms. — The larva is white with deep red bands and inhabits the pouches of *Sarracenia variolaris* and *flava*. It spins up the opening and feeds on the inner surface of the green tissue and does not touch the captive insects.

70. Genus: **Sexserrata** *B. & Benj.*

Denominated after the very remarkable process on frons that has six serrations: a beaker shaped protuberance with forked central horn, the edges themselves each extended above and below in 2 points. Thorax scaled and without crest. Anterior tibiae have a horny spine on outer side. Proboscis developed, palpi obliquely porrect. Only one species:

S. hampsoni *B. & Benj.* Quite unicoloured silkily glossy white, hindwings slightly dusky towards apex. *hampsoni*. On underside fringes with yellowish checks. Wing expanse: 23 mm. California in April and May.

71. Genus: **Neotarache** *B. & Benj.*

Proboscis weak, palpi obliquely porrect. Frons with beaker shaped protuberance with pointed central process. Thorax and abdomen covered with scales and without crests. Tibiae devoid of spines, anterior metatarsus with 3 bold spines. Only one species:

N. deserticola *B. & Benj.* Forewings deep olive-brown with white basal area. Posterior to same a transverse band consisting of quadrate spots that are somewhat displaced inwards in the cell. Instead of the reniform stigma 2 conjoined spots. Subterminally there is a band consisting of 3 spots. Hindwings grey-brown, paler towards base. Wing expanse: 16 mm. South Nevada, Arizona, California.

72. Genus: **Grotellaforma** *B. & Benj.*

This Genus reminds one strongly of the *Heliothidae* Genus *Grotella*, but tibiae are without spurs. The structure is almost identical with that of *Exyra*, but abdomen is much shorter and scarcely extends beyond the hindwings. Frons has a beak-shaped process with a corneous plate below.

G. lactea *Stretch.* (= *calora* *Barnes*) (52 l). Forewings pure white finely dotted with black, in place of *lactea*. transverse lines generally merely only 2 or 3 dots. Hindwings grey-brown with white fringes. Arizona. This is the species held by HAMPSON to belong to *Illice* and which we had placed in Vol. VI, p. 246 *).

73. Genus: **Phoenicophanta** *Hamps.*

Atrophied proboscis, palpi upturned with short terminal segment. Frons with large rounded corneous protuberance that is somewhat truncate below. Thorax scaled and like the abdomen, without crests. There is no appendicular cell on narrow forewings. The median subcostal nervule is absent, the 3 lower ones are stalked, the uppermost arises from cell. The ♂ has a longish cavity posterior to end of cell so that the nervules arising here are somewhat dispersed. On hindwings the central radial is poorly developed from centre of the discocellular nervule. Only 3 closely related species:

P. flavifera *Hamps.* (52 l). Forewings yellow with carmine-red central and marginal areas, the former enclosed by deep red transverse lines that are edged with yellow on averted sides, the posterior line over the centre with a projection outwards. Costa is also widely carmine in the yellow basal area. Hindwings brownish. Argentine.

P. bicolor *B. & McD.* (52 l) is very similar to the preceding and perhaps only a local race. It is much smaller, the red central band is distinctly narrower owing to an expansion of the yellow subterminal band. Hindwings pale yellowish brown with rosy tone towards margin. Described from Arizona.

P. modestula *Dyar* has deep carmine-brown forewings with 2 wide white transverse lines, the outer one more boldly undulate than the inner, 3 small white subapical costal striations with a fine white line anterior to the black marginal line. Hindwings somewhat paler brown. Mexico (Sierra de Guerrero).

74. Genus: **Xanthoptera** *Guen.*

Small, generally yellow Noctuids with developed proboscis, upturned palpi and rounded protuberance on frons with a faint ridge in the centre. Body with scales and without crests. Forewings with usual neuration and appendicular cell. The median radial of hindwing is fairly well developed.

X. rufescens *Hamps.* (53 a). Forewings white peppered with fuscous, costa and marginal area dusted with brown. The veins are mostly finely streaked with fuscous. There are 2 fuscous transverse lines of which the posterior one conjoins, where it is angulated, with an oblique apical line. Hindwings yellowish white, narrowly brown at margin. Columbia, Brazil, Trinidad.

X. furcata *Wkr.* (53 a). Marked like the preceding species, but ground colour of wings is a brilliant yellow bronze with traces of fuscous outline to stigmata. Hindwings white, brownish at margin. Brazil.

* The Genus *Homolagoa* (vide p. 325) would be better classified here than with the *Amphipyrae*.

- obliquata*. **X. obliquata** *H.-S.* (53 a) is also similar. Forewings dusted with fuscous on ochreous ground. Anterior transverse line is absent. All 3 stigmata indicated by black dots. In ♀ markings are more distinct. Hindwings reddish grey, paler at base. Cuba.
- auruda*. **X. auruda** *Schs.* (53 a). Brighter yellow than the preceding species with only one diffuse fuscous oblique line extending near to the apex. Stigmata also indicated by 3 black dots. Fringes lustrous leaden grey. Hindwings pale brownish. Columbia, Brazil.
- botyoides*. **X. botyoides** *Guen.* (= *alboflava* *Wkr.*, *dinumeratalis* *Wkr.*, *nigrofimbria* *Drc.* part.) (53 a). Forewings yellow, narrowly dusted with brown in marginal area. All 3 stigmata merely black dots, behind that of the reniform an additional round brown spot with whitish centre. The posterior transverse line is only indicated by dots. Hindwings white, brownish at margin. Mexico to Brazil and also on Trinidad.
- intensifica*. **X. intensifica** *Dyar.* Forewings deep orange-yellow with fuscous curved postmedian. The black stigmatal dots minute or missing. Hindwings orange-brown. Panama.
- aurifera*. **X. aurifera** *Wkr.* (= *nigrofimbria* *Drc.* part., *tripuncta* *Möschl.*) (53 a). Unicoloured pale yellow without deeper brown shade at margin with the 3 black stigmatal dots and a more or less distinct brown postmedian. Fringes grey-brown. Hindwings pale brownish. Mexico to Columbia, also on Jamaica, Cuba, Porto Rico, *auriferana*. Grenada, Trinidad. — ab. **auriferana** *Strd.* (= ab. 1. *Hamps.*) is faintly dusted with fuscous in disc.
- nigrofimbria*. **X. nigrofimbria** *Guen.* (53 a). Pure yellow, merely with the 3 delicate black stigmatal dots and black-brown glossily leaden fringes. Hindwings brownish. From North America (New York to Florida and Texas) and as far as Mexico.

75. Genus: **Heliocontia** *Hamps.*

Small Noctuids with narrow wings and generally with considerable differences in the sexes. Proboscis developed, palpi upturned, frons with round protuberance and corneous plate below. Thorax scaled and with a large crest at back. Abdomen without crests. On forewings appendicular cell is absent, the 3 lower subcostal nervules are stalked, both the upper ones arise free from the cell. On hindwings the central radial is poorly developed and arises from centre of disco-cellular nervure.

- pantherula*. **H. pantherula** *H.-Schäff.* (= *uncinula* *H.-Schäff.* ♀) (53 b). The ♂ has deep brown basal area, beyond same widely white, yellow in central area and then fuscous admixed with silvery deep red. A white costal spot in yellow central area. Marginal area spotted yellow. The ♀ is fuscous in basal area, beyond same grey-black, dusted with deep reddish grey. In central and marginal areas speckled with green-yellow with white costal spots in and beyond the centre. Fine white transverse lines with yellow-white apical and anal spots. Cuba.
- apicella*. **H. apicella** *Grt.* (= *truncatula* *Zell.*, *accepta* *H.-Schäff.*, *marmorea* *Drc.*) (53 b). The ♂ is yellow with obliquely cut off fuscous basal spot, reddish brown longitudinal streak on mediana and in centre a black-brown patch on fringes. The ♀ is black-brown, speckled with greenish yellow with fuscous basal spot edged somewhat yellowish and oblique yellowish apical spot. Hindwings deep reddish brown. From Carolina and Florida to Columbia. — The larva is brown with narrow yellow longitudinal lines. The lateral lines speckled with orange.
- obliquella*. It feeds on yellow Brown-weed and pupates among the leaves. — ab. **obliquella** *Strd.* (= ab. 1 *Hamps.*) is a ♀ form with an oblique streak instead of the apical spot.
- lepus*. **H. lepus** *Guen.* (= *marmorea* *Btlr.*) (53 b). Forewings fuscous, peppered with yellow, with oblique darker brown basal spot edged with pale yellow. Yellow admixture in marginal area and with an oblique yellow spot in centre of costa. Fringes speckled with black in centre. In the ♀ the ground colouring is blackish, the long overlapping scales and the oblique spot on costa inclined to yellowish white. From southernmost Mexico to Brazil and Argentine. — f. **concordens** *Dyar* from Panama. The ♂ form does not differ from that of ♀, the basal spot is dark brown, beyond same black-brown, becoming paler towards the margin and terminating in a narrow yellow zone. The yellow costal spot in centre is narrow; hindwings black.
- basipuncta*. **H. basipuncta** *Schs.* Forewings pale yellow, widely orange at base with an accession of black scales below base of cell. A fine black dot at close of cell. Hindwings brownish grey. French Guiana.
- pyralidia*. **H. pyralidia** *Schs.* (♀ = *vinculis* *Dyar*) (53 b). In ♂ in the basal $\frac{3}{4}$ deep reddish grey, more intense at base, blackish with oblique edge and with large, long, costal spot dusted with bluish white, in which the two stigmata are situate and more or less distinct. Margin fuscous admixed with yellow, narrowly white before centre. The indistinct postmedian is narrowly edged with white on costa. Hindwings yellow-white. The ♀ which was described as *Fruva vinculis* is blackish, densely speckled with yellow-green with oblique black-brown basal spot. Nebulous whitish spots are indicated on costa. Hindwings grey-brown. Mexico (Oaxaca, Tehuacan).

H. valena *Drc.* (53 b) is somewhat similar, fuscous, deep reddish grey dusting on inner marginal half *valena*. to postmedian. A flat semicircular whitish yellow mark on costa, below same the indistinct grey stigmata. The very irregular posterior transverse line is fairly distinct. Marginal area whitish yellow dusted with fuscous and minute dark marginal dots. The ♀ is very similar, but inner area is darker, dusted with brownish black. Mexico, Guatemala.

H. margana *Fabr.* (= *subapicana Wkr.*, *radisana Wkr.*, ♂ *inorata Grl.*, ♀ *sordida Grl.*, *canofusa Hmps.*, *margana. tarasca Schs.*) (53 c). Forewings of ♂ bright fuscous, admixed with ochreous at costa and with brown ante-median band that is edged with pale yellow towards base. Stigmata small and black with white surrounds, between them a brown central line. A white triangular spot before the apex beyond the postmedian which is dusted with grey outwardly in the lower half. In ♀ forewings are dark brown speckled with grey with a white streak in centre of costa and triangular mark before apex. Stigmata and transverse lines extinct. Hindwings dark brown. From Texas and West Indies, then further south from Panama to Argentine and Paraguay.

H. perstructana *Wkr.* (= *phaenna Drc.*, *mata Drc.*) (53 c). The ♂ is ochreous, faintly dusted with fuscous, *perstructana*. more or less leaden black in innermarginal half, peppered with yellow with the yellow transverse lines. Stigmata and costal spots black, as are also a faint apical streak and the fringes. Hindwings brownish. The ♀ is black-brown densely speckled with olive-yellow, transverse lines and 3 costal spots yellow-white. Hindwings brown-grey. Mexico and Jamaica.

H. speciosa *sp. n.* (53 c) is very similar to the preceding. Forewings orange, pale yellow in costal area *speciosa*. with 4 black costal spots. Orbicular and reniform stigmata are large black spots. The former is conjoined with the inner margin by a leaden black oblique streak. An oblique patch behind the reniform stigma which is joined to a triangular spot just before the anal angle. Fringes orange, with a large round black spot at apex. Hindwings black-brown. Mexico (Guerrero). Type in coll. DRAUDT.

H. cleta *Drc.* Forewings orange-red, yellow on costa in apical third. A leaden grey oblique spot at base *cleta*. with 4 black costal spots. Stigmata leaden grey with yellow surrounds, a blue-grey band from orbicular to inner margin and a similar subterminal. Hindwings pale dull crimson-brown. The ♀ is not described. Mexico (Guerrero).

76. Genus: **Spragueia** *Grt.*

Structure precisely as preceding, but with a narrow small appendicular cell on forewings. The crest on metathorax is flat, pointed backwards. The numerous species are superficially very like the preceding and are mainly from North America.

Sp. guttata *Grt.* (53 c). The black forewings are spotted with yellow-white between the yellow-white *guttata*. transverse lines. A yellow costal spot is situate before the white reniform stigma with its black surround. A fuscous band extends from its anterior side to the inner margin. Apex is intersected by an oblique fuscous band that also extends to inner margin. Beyond it lies the yellow-white subterminal line. Hindwings fulvous. Texas, Mexico.

Sp. funeralis *Grt.* (53 c). Forewings leaden grey, speckled with white towards margin, with 2 wide yellow *funeralis*. transverse bands that are dusted with orange on the sides facing one another. Between them the leaden grey stigmata with a large yellow costal spot in the middle. There is also a yellow spot subapically. Hindwings brown. Arizona.

Sp. magnifica *Grt.* (53 c). Forewings leaden black with yellowish white transverse lines suffused with *magnifica*. orange that merge above the inner margin. Stigmata black. From orbicular a black streak extends to costa with a yellow spot posteriorly. A yellow band before margin and another along base of inner margin. Hindwings brownish. New Mexico, Arizona.

Sp. onagrus *Guen.* (53 d) is similarly marked but larger. Markings bright orange and expanded. Partially *onagrus*. whitish on costa. Hindwings darker brown. Florida, Texas.

Sp. leo *Guen.* (= *onagrus H.-Schäff. nec Guen.*) (53 d). Similar to the preceding, but the transverse *leo*. lines do not merge at inner margin, they are separated by a quadrate black spot there. Orbicular stigma has no black streak to costa. Subterminal black band with orange interruption above anal angle. Hindwings brown. In ♀ the stigmata are widely conjoined by black and orbicular again with the black base. Florida, Texas.

Sp. dama *Guen.* (= *trifariana Wkr.*, *transmutata Wkr.*, *pardalis Grl.*) (53 d). Forewings of ♂ orange *dama*. with oblique black basal spot which is outwardly triangular and edged with yellow-white. Between the black stigmata a large pale yellow costal spot in which there is a small black streak in centre of costa. At postmedian is a further small pale yellow spot. From the orbicular stigma and behind the reniform, deep crimson bands extend to inner margin. Fringes checked with black over the centre. Hindwings black-brown. In ♀ almost the entire wing is crimson-black. From Florida and Texas to Guatemala and also on Cuba, Haiti and Grenada.

jaguaralis. **Sp. jaguaralis** *Hmps.* (= *radisana* *Drc.*) (53 d). Forewings whitish ochre dusted with fuscous in inner marginal half. Transverse lines yellowish white, the small stigmata dark grey. A dark shade from quadrate orbicular to inner margin. Hindwings brownish. The ♀ has grey-black bands in basal and median areas. In centre of inner margin 2 deep fuscous bands. Marginal area grey-black, peppered with yellowish white. Texas, Mexico.

grana. **Sp. grana** *Dogn.* (53 d). Costal half orange-red, inner marginal half black-brown. Black costal dots and stigmata. Postmedian area almost completely black-brown with orange marginal band. Hindwings yellow-white, brownish at margin. Ecuador.

obatra. **Sp. obatra** *Morr.* (= *plumbifimbriata* *Grt.*, *velata* *Streck.*) (53 d). Forewings yellow-white, brown in inner marginal half. Anterior transverse line yellow-white with wide leaden grey band posteriorly. Small leaden grey stigmata. The brown posterior transverse line expanding in spots on costa, the inner marginal part having a yellowish white outer edge. Posterior to it is a leaden grey band. Hindwings yellowish white, brownish at margin. Texas, Arizona, Mexico.

77. Genus: **Graeperia** *Grt.*

Differing from *Spragueia* by the shorter palpi that project obliquely upwards. The corneous plate on the frons varies considerably in the different species, it is often with several crenulations and points, trilobed, excised, large or small, with a narrow horny plate below. Neuration is identical with the preceding Genus, except for a somewhat displaced origin of the uppermost radial nervule.

tripartita. **G. tripartita** *Sm.* (= *mediatrix* *Dyar*). Forewings yellow-white with large dark spot at inner margin. Base sparsely speckled with brownish. Transverse lines indistinct, the anterior line double. Beyond the posterior line, there is a blue-grey band in the lower half. A black dot denotes the orbicular stigma. Reniform is represented by an arc that is open underneath. Subterminal line is shaded with grey inwardly. Hindwings white, brownish at margin. Arizona.

sutor. **G. sutor** *Hmps.* (53 e). Forewings yellowish with very incomplete transverse lines and a fuscous band dusted with deep reddish grey behind the dentate outer line. The latter extends to the central line in the inner marginal half. Stigmata as in *tripartita*. Black sagittate marks before the subterminal line. Hindwings grey-brown. Arizona.

sutrix. **G. sutrix** *Grt.* (53 e) is very similar to the preceding. Anterior transverse line is double, the entire marginal area is deep crimson-grey. A triangular yellow-white spot on costa in the postmedian with the yellow-white subterminal line, which is spotted with brown inwardly. Hindwings paler than in *sutor*. Colorado, New Mexico, Arizona.

nuicota. **G. nuicota** *Sm.* (= *carcharodonta* *Hmps.*) closely resembles the preceding, differing by a row of crenulations on upper edge of plate on frons. Forewings yellow-white, brown in marginal area, peppered with deep crimson-grey on costa to subterminal line, on inner margin to centre, markings almost exactly as in *sutor*. Hindwings yellowish white, brownish at margin. Texas.

altera. **G. altera** *Sm.* (= *conocharodes* *Hmps.*) (53 e). A delicate, sleek species with pure white forewings that are violet-grey in marginal half. Transverse lines grey and faint. Punctiform orbicular. Reniform stigma grey with white surround. Hindwings white, faintly grey at margin. Arizona, Mexico.

megocula. **G. megocula** *Sm.* (53 e) is easily distinguishable from the preceding by its steel-grey forewings that are peppered with white in basal area. Reniform stigma is large with black centre and white surround. A white costal spot occurs at top of and anterior to the white subterminal line. Hindwings white, brownish at margin. California.

costalis. **G. costalis** *Wkr.* (= *magnifica* *Neum.*) (53 e). Forewings dark brown, widely yellow on costa, expanding at the base to inner margin. Hindwings white, brownish at margin. Texas to Brazil and on Haiti.

indubitans. **G. indubitans** *Wkr.* (= *dimidiata* *Wkr.*, *citrina* *Drc.*) (53 e). Forewings fuscous, somewhat speckled with white, admixed with yellow in basal and costal areas. Transverse and central lines fuscous. Stigmata fuscous. Subterminal line with inner brown shade. In ♀ forewings are pale olive-yellowish faintly peppered with a little brown, markings more distinct. Hindwings white, brownish at margin. Texas to Brazil, Cuba and Haiti.

78. Genus: **Fruva** *Grt.*

Differs from the preceding Genus by the truncate conical process on frons, that has a raised ridge. Otherwise identical. Appendicular cell narrow and small. Only one species:

fasciatella. **F. fasciatella** *Grt.* (53 e). Forewings yellow-white, dusted with brown, with indistinct fuscous transverse lines. A diffuse central line anterior to the small elliptical reniform stigma. Hindwings yellow-white, brownish at margin. The ♀ is more densely dusted with fuscous, costa whitish, stigmata and transverse lines more distinct. The posterior line has a whitish outer edge, the subterminal line is whitish, the apex is intersected by an oblique brown streak. Texas, Arizona.

79. Genus: **Conochares** Sm.

Differing from *Graeperia* by the absence of the appendicular cell on forewings, where the lowest subcostal nervule arises from upper angle of cell, the two following nervules are stalked and the two upper ones arise free from the cell. The rounded process on frons is somewhat differently shaped and has a raised ridge at the end.

C. acuta Sm. (53 f). Forewings silvery white in basal half, dusted with grey in outer half, edged inwardly by a blackish central line that is attached at the bottom outwardly to a dusky dusted triangular spot. The median line is acutely angulated outwards in the cell to the reniform stigma which is circumscribed by white. Hindwings brownish grey. Arizona.

C. catalina Sm. (53 f). A very pale, yellowish white species with small brownish ringed reniform stigma. Faint brownish median band and quite extinct brownish marginal band. Hindwings white, brownish at margin. Arizona.

C. elegantula Harv. (= *semiopaca* Grt.) (53 f). On forewings behind the faintly curved median line, a wide brown band intersected by silvery blue, that expands downwards to anal angle. At its outer edge is the blackish reniform with a white edge and with a silvery blue spot above it. Marginal area yellowish with brownish spots. Hindwings white, brownish at margin. Montana, Colorado, Nevada, California.

C. arizonae H. Edw. (= *seminivealis* Hulst, *interrupta* Sm.) (53 f). Forewings as in the preceding species with basal half white, frequently somewhat yellowish. In marginal half dusted with grey and brownish, edged inwardly by a black slightly curved median line. Brownish reniform stigma with white edge. Hindwings white, somewhat brownish at margin. California, New Mexico, Arizona.

C. hutsoni Sm. (53 f). Forewings yellowish with diffuse brownish transverse lines and median shade, a black dot in place of orbicular stigma. Reniform stigma small, round, blackish with white edge. There is still a brownish shadow-like streak before margin. Hindwings brownish yellow. Arizona.

80. Genus: **Tarachidia** Hamps.

Exactly like the preceding Genus but with narrow, longish appendicular cell on forewings. The corneous plate below the rounded process on frons is triangular and has a raised ridge. Numerous, mostly small species, chiefly of north american distribution.

T. parvula Wkr. (= *georgica* Grt.) (53 f). Forewings ochreous, dusted with brown in inner and marginal areas, the latter extending in a triangle towards end of cell. A black dot in place of orbicular stigma. Reniform stigma a small brown ringlet. From lower angle of cell an oblique extinct line extends to inner margin. Fringes metallic leaden, grey-brown. Hindwings fulvous. U.S.A. (Georgia).

T. bicolorata B. & McD. (53 f) is entirely devoid of markings. Basal area to end of cell ochreous, paler yellow at costa. Subterminal area suffused with pale crimson, marginal area again ochreous and fringes with leaden sheen. Both colours merging gradually in one another. Described from 2 ♀♀ from S. Arizona.

T. albitermen B. & McD. (53 g). Forewings olive-brown, somewhat more yellowish in ♀, sparsely peppered with white that is somewhat denser in marginal area and which contracts towards apex being widest on submedian fold. Orbicular stigma is a black dot. Reniform an indistinct darker patch, whence a shadowy posterior transverse line extends to inner margin. Hindwings white, faintly brownish. Arizona, California.

T. tortricina Zell. (53 g). Forewings ochreous, orbicular stigma a black dot, reniform a small blackish ringlet, posterior transverse line indistinct brownish from lower end of cell to inner margin with a brown dusted triangle posteriorly. Hindwings fulvous. Canada to California. — A variable species: in — f. **obsoleta** Grt. all markings are more or less obsolete, — f. **modesta** H. Edw. is grey-brown in ground colouration speckled with yellowish white, — f. **deleta** H. Edw. is still darker brown, with the exception of the marginal area and fringes which are sparsely peppered with yellowish white.

T. fumata Sm. is a quite monotonously coloured black-brown species with faint metallic sheen and still fainter grey dusting. Hindwings dark brown. Nevada, California.

T. erastrioides Guen. (53 g). Forewings white, peppered with olive-brown and crimson-grey in posterior half of median area and in postmedian with the exception of costa. Orbicular stigma a black dot, the small brown reniform with black surround. Posterior transverse line black. The white subterminal line is shaded on both sides with pale brown. Hindwings white, brownish at margin. Canada to Illinois. — Larva is deep green with 12 white longitudinal lines, frequently with intermediate black lines; the head is spotted with black. It feeds on *Ambrosia artemisiaefolia*.

- nanodes*. **T. nanodes** *Hmps.* (53 g). Forewings yellowish white, stigmata as in preceding species, transverse lines brownish, the anterior line consisting of a few dots. Behind the brown median line a brown and mauve spot on inner margin. Marginal area dusted brown. Subterminal line therein merely indicated at costa by black and mauve spots. Hindwings pale brownish. Arizona.
- tenuicula*. **T. tenuicula** *Morr.* (= *phecolisca Drc.*) (53 g) is a small white species, mauve in outer area with a brown band behind the median line and below the cell. Stigmata and transverse lines as in preceding species. The ♀ has a mauve patch anterior to brown median band extending to the straight black antemedian and with dark brown hindwings which in the ♂ are transparent white, brownish at margin. From Texas and Arizona through Mexico to Colombia and common almost everywhere.
- corrientes*. **T. corrientes** *Hmps.* (53 g) is very similar. Forewings more inclined to be yellowish white, brown in outer area and mixed with mauve with a distinct subterminal line to anal angle. Hindwings yellowish, brownish at margin. In ♀ the entire basal half is dusted with mauve, hindwings dark brown. Brazil, Paraguay, Argentine.
- libedis*. **T. libedis** *Sm.* (53 g). Forewings yellowish with olive-yellow postmedian and grey marginal areas. Stigmata as in the preceding species and with yellow-grey and brown transverse lines. A grey patch in inner marginal half in the outer median area. The white subterminal line is delicately dentate. Hindwings white, brownish red on veins and at margin. Texas, Colorado, New Mexico, Arizona.
- candefacta*. **T. candefacta** *Hbn.* (= *minuta Haw.*, *haworthana Westw.*, *debilis Wkr.*) (53 h) closely resembles *tenuicula* and *corrientes*, but is distinctly larger, with olive-yellow shade in cell and subterminal line with olive inner edge situate in leaden grey marginal area. Hindwings white, narrowly brownish at margin, entirely brown in ♀. A very common, widely distributed species from Canada to Mexico. — f. **neomexicana** *Sm.* (53 h) is inclined to yellowish white, the entire median shade olive-yellow, postmedian area yellow admixed with violet towards the inner margin; subterminal line more widely white. — ab. **candefactella** *Strd.* (= ab. 1 *Hmps.*) is a form in which the marginal area is not grey, the grey colouration is only to be found posterior to the olive median band between the cell and inner margin. Reniform stigma with white core. — Larva green with 12 longitudinal white lines, frequently with intermediate black lines. The head is striped green and white. It feeds on *Ambrosia artemisiaefolia*.
- huita*. **T. huita** *Sm.* (53 h). Forewings white with large grey conical inner marginal patch edged with olive and which stretches to anal angle. Marginal area somewhat dusted with grey, edged with olive inwardly in upper half. Stigmata and transverse lines are absent except for a grey spot in centre of costa that changes to yellow in cell. Hindwings white, brownish at margin. Texas, Arizona.
- carmelita*. **T. carmelita** *Dyar.* in ♂ sex is impure yellow-white on forewings, olive-grey at base with an olive-grey oblique band in centre that is contingent to the faint reniform stigma. A similar band posteriorly that is traversed by the black postmedian. Fringes spotted with black in upper third and at anal angle. Hindwings brownish at margin. The ♀ is more of an impure white, the olive bands are wider, the outer one extending to margin. Hindwings dark grey-brown. Panama.
- virginalis*. **T. virginalis** *Grt.* (53 h). Forewings silvery white, with faint yellowish hue in marginal half. Median shade fulvous, with olive brown reniform stigma with white surround. Posterior transverse line shadow-like, olive-brownish admixed with yellow. Hindwings white with brownish marginal band. Texas, Colorado, Arizona.
- binocula*. **T. binocula** *Grt.* (53 h). Forewings yellow-white with olive-yellow median band, posterior to which is a leaden coloured band that bends outwards at the grey reniform stigma which is circumscribed by white. This band turns upwards towards the apex shortly before reaching the margin. Subterminal line is spotted with olive-yellow inwardly, the margin beyond it is dusted with grey. Hindwings white, narrowly brownish at margin. Kansas, Texas, Arizona.
- heonyx*. **T. heonyx** *Dyar* (53 h) is a very small species with pure white forewings that are brown in outer half. The line that separates the two colours commences in centre of inner margin, proceeds obliquely to upper angle of cell, bends here rectangularly outwards and for a second time shortly before reaching the margin, ending shortly before apex on costa. Hindwings yellowish white, brownish at margin. Mexico (St. Luis Potosi).
- tenuescens*. **T. tenuescens** *Sm.* (53 i). Forewings silvery white with yellowish costal spot above end of cell and with an olive-brown band peppered with white extending from the brown reniform that is ringleted with white, to the inner margin. Hindwings white, brownish at apex. Florida.
- cuta*. **T. cuta** *Sm.* (53 i). Forewings pure white in basal half, outwardly fuscous dusted with grey and peppered with black. Edged inwardly by a black line that is angulated outwards in cell. Before apex on costa a large semicircular white patch that extends to the small grey reniform stigma. Hindwings yellowish white. New Mexico, Arizona.
- alata*. **T. alata** *Sm.* (53 i). Forewings ochreous brown, white on costa, with white longitudinal band over the inner marginal nervure, obliquely to lower angle of cell and from there to white costa. Hindwings yellowish brown. Arizona.

T. venustula *Wkr.* (= *discoidalis* *Wkr.*, *fortunata* *Grt.*, *perita* *Grt.*, *subcitrinalis* *Hulst.*) (53 i). Fore- *venustula*. wings orange-yellow with a narrow grey-brown oblique band from centre of discocellular nervure to centre of inner margin, that is edged by a white line inwardly. Hindwings yellowish. In ♀ the colour is more ochreous reddish, the oblique band wider, blue-white, peppered with brown, finely edged by brown and then white. Hindwings darker. Arizona to Mexico (Chihuahua) and Haiti.

T. clausula *Grt.* (53 i). Forewings yellow in basal half, brown in outer half, densely peppered with white, *clausula*. edged inwardly by an arched white line. Hindwings brown. Arizona, Colorado.

T. semiflava *Guen.* (53 i) is very similar. The inner edge of the deeper brown outer half is much more *semiflora*. oblique and with black instead of white edge. Hindwings somewhat darker at margin. Southern States, Colorado, Texas, Mexico.

T. flavibasis *Hmps.* (= *holophaea* *Hmps.* ♀) (53 i) is very similar to the preceding, basal half rather *flavibasis*. more ochreous yellow, hindwings darker brown. In ♀ the entire forewing brown, peppered with mauve with a few olive-yellow scales in basal half and traces of darker median and subterminal lines. Grenadines.

T. albimargo *B. & McD.* (53 k) superficially does not seem to fit into this Genus, reminding one more *albimargo*. of *Chrysoecia scira*. The lowest subcostal nervule arises from cell and not from appendicular cell. Forewings blackish mauve with yellowish white marginal area, greenish black in subterminal area. Before this there is a double transverse line interfilled somewhat paler, with a dark spot at end of cell. Hindwings sepia. Texas.

T. margarita *Schs.* (53 k). Forewings whitish yellow at base, then coppery olive-brown. Median area *margarita*. and apex dusted with silvery grey. The small stigmata with white ringlets, a triangular white costal spot posterior to centre. From the point of this the postmedian arises which has a dark shade inwardly at bottom. Subterminal line white. Hindwings coppery brown. Venezuela.

T. viridans *Schs.* (53 k). Forewings whitish with olive-green tone, especially in marginal area. Olive- *viridans*. green oblique band before centre. Orbicular stigma black punctiform, reniform a minute black dot. Thence a blackish line with white edges extends to inner margin and behind it is an olive-green lunular mark. The posterior whitish transverse line arises from a triangular white costal spot. Hindwings whitish, brownish at margin. The ♀ is dusted with brown, being grey in inner median half and at anal angle. Hindwings dark brown. Brazil, Paraguay, Argentine.

T. albisecta *Hmps.* (53 k). Forewings whitish in basal half with brownish tone, outwardly brown with *albisecta*. dark brown transverse lines, the posterior line being white outwardly at costa. Orbicular stigma a small black dot, reniform with black surround. The terminations of mediana and lower radial nervule streaked with white. Hindwings fulvous, darker at margin. Argentine.

81. Genus: **Neptunia** *B. & McD.*

Distinguishable from neighbouring Genera by a bold process on frons that has 3 points of which the central one is longer and wider and with a corneous plate below. In other respects except for a weaker proboscis, it corresponds to the Genus *Graeperia*. Only 1 species:

N. pulchra *B. & McD.* (53 k). Forewings olive-yellow, paler and purer yellow at base and costa, with *pulchra*. oblique brown transverse lines, the anterior one only faintly distinguishable, the posterior one dentate and with pale yellow outer edge. Orbicular stigma brown punctiform, the small oval reniform with brown surround. Apex intersected by a small dark patch, below which the outer margin is paler yellow than the subterminal area. Fringes deep reddish brown. Hindwings yellowish, brown at outer margin. Texas.

82. Genus: **Euaontia** *B. & McD.*

To be differentiated by a coniform truncate frontal process, that is extended into 2 vertical points. A few hairs amidst the thoracic scales. Forewings with appendicular cell, hindwings with developed median radial.

E. semirufa *B. & McD.* (53 k). Forewings white in basal half, separated from the salmon coloured *semirufa*. brown dusted outer half by an oblique brown line. Reniform stigma with whitish surround and fine black circumscription. Subterminal line grey-white with small brown marginal spots outwardly. Hindwings white, dusky at margin. Nevada.

E. clarki *B. & McD.* (53 k). Forewings whitish with faint yellow hue. Subterminal brown or dusted *clarki*. with fuscous with brown transverse lines and median line. The outer half of median area deep brown with bluish reniform stigma therein. Marginal area behind the white subterminal line is dusky. Hindwings white, brownish at margin. South California.

83. Genus: **Stylorache** *Hmps.*

This Genus has somewhat longer and sleeker upturned palpi than the nearest related Genera. Frons with coniform process that is produced to a sharp point. Thorax scaled and like the abdomen without crests. Forewings with appendicular cell, median radial of hindwing well developed. Only one species:

- albida.* **S. albida** *Hmps.* (53 l). Forewings pure white with 3 delicate brown striations on costa and with a large semicircular, brown inner marginal spot that is dusted with mauve and extends from centre to anal angle. Hindwings white. Argentine.

84. Genus: **Conacontia** *Sm.*

Proboscis developed, palpi obliquely upturned with short, sleek terminal segment. The pointed coniform frontal process forms a sort of three-sided pyramid with the corneous plate which has its point turned upwards. The scaled thorax has a flattened crest at rear. No crests on abdomen. The long narrow forewings have an appendicular cell and hindwings a well developed median radial.

- huahuca.* **C. huahuca** *Sm.* (53 l). Forewings yellow-white, spotted with olive-brown and leaden grey at inner margin, behind the cell and at margin. In the colouration at inner margin vestiges of the pale transverse lines are visible. Hindwings yellow-white. Arizona.
- flavicosta.* **C. flavicosta** *Sm.* (53 l) is very similar to the preceding but has brownish hindwings that are duskier at margin. Forewings are more extensively dark in inner and marginal areas, admixed with silvery mauve and fuscous. Transverse lines therein blackish and barely discernible. Montana, Colorado, Durango, New Mexico.
- orba.* **C. orba** *Sm.* (53 l). The inner area of forewings is still darker grey-brown extending into the yellow costal area in two wide bands to the costa. Orbicular stigma a dark dot. Reniform a round grey spot with white surround. Subterminal line and the entire anal angle yellowish white. Hindwings brownish. Arizona.
- angustipennis.* **C. angustipennis** *Grt.* (53 l) closely resembles the ♀ of *Tarache axendra*, but is smaller and has narrower wings. Forewings quite mauve admixed with dark brown. A white cell stripe and subterminal. Transverse lines black-brown, the posterior one pure black commencing in a yellow-white triangular spot on costa. Stigmata with brown surrounds, reniform with yellow-white core. Hindwings brownish, darker at margin. Canada to New Mexico and Mexico (City).

85. Genus: **Trichotarache** *Grt.*

Like the preceding Genus but with greater admixture of hairs in the vestiture of scales. Palpi porrect with long hairs. Frons with simple rounded process and with corneous plate below.

- assimilis.* **T. assimilis** *Grt.* (53 l). Forewings black-brown, grey-white in marginal area with conical grey-white patch in centre of costa. Transverse lines double, grey-white and small stigmata. Black sagittate marks before subterminal line. Hindwings dark fuscous, yellowish in disc. California.

86. Genus: **Hoplotarache** *Hmps.*

To this otherwise purely african Genus, a central american representative is added. The truncate coniform frontal process with ringed rim and central process are characteristic. Thorax scaled and without crest like the abdomen. Forewings with appendicular cell, hindwings with fully developed median radial.

- viridifera.* **H. viridifera** *Hmps.* (53 l). Forewings yellowish white with mauve marginal area. A large green costal spot in centre and extensive green dusting towards inner margin before the black postmedian. Stigmata marked in green, subterminal line brown scaled with white on inner side. Hindwings transparent white, brownish at terminations of veins at margin. Panama.

87. Genus: **Chelichares** *Hmps.*

Structure very similar to preceding Genus, short terminal segment of palpi porrect, frons with large corneous protuberance and ringed rim and beaker shaped central process with corneous plate below. Anterior tibiae with short spines on inner side at extremities. Only one species:

- nubifera.* **Ch. nubifera** *Hmps.* (53 l). Forewings white with double grey-brown anterior transverse line and large mauve inner marginal spot from centre to subterminal line. Orbicular stigma black punctiform, reniform a yellow streak. The white subterminal line is shaded inwardly with olive-brown and mauve-grey. Marginal area behind it is blue-grey with minute black spots at apex and anal angle. Hindwings white, brownish at margin. Argentine.

88. Genus: **Tarache** Hbn.

A large cosmopolitan Genus of very uniform type and appearance and which is closely connected with the previous Genera. Its main characteristics are the porrect palpi with short terminal segment, simple rounded protuberance on frons, frequently with rough upper surface and corneous plate below. Thorax scaled, with a small flat crest at rear, abdomen without crests. Forewings with appendicular cell. Hindwings with well developed median radial. Generally the sexes are very dissimilar.

T. lactipennis Harv. (54 a). In this and the following 6 species the ♂ has a transparent cavity at base of forewings above the inner marginal nervure. Forewings white with fuscous basal spot, olive-brown subterminal band with a finely dentate, white transverse line therein flecked inwardly with silvery blue. Hindwings white, brownish at margin. Texas. *lactipennis*.

T. expolita Grt. (= embolima Drc.) (54 a). Forewings brown, dusted with silvery purple reddish with wide yellow-white costal streak which is edged with olive below. Anal spot yellow-white. Very indistinct dark transverse lines and elliptic reniform circumscribed by blackish. Hindwings pale fulvous, margin and veins darker. Texas and Arizona to Mexico. *expolita*.

T. interposita Dyar (54 a). Forewings leaden black in wider inner marginal area intermixed with silvery blue and bronze-brown scales. Costa pure white intersected by a grey band both in basal and apical third. In place of stigmata the dark inner colouration projects a little into the white. Hindwings whitish grey, darker on veins and at margin. Mexico (Tehuacan), a small species. *interposita*.

T. cora B. & McD. (54 a) is somewhat similar to the preceding but larger. Forewings reddish brown with paler patch in centre of inner margin. Costal area wide, white somewhat inclined to olive below and intersected by two yellow oblique bands. The projecting reniform stigma circumscribed by black. Transverse lines indicated by whitish in the dark part. Subterminal area dusted with bluish white, almost pure white at anal angle. Hindwings transparent white, brownish at margin. Arizona. *cora*.

T. lucasi Sm. (= ♂ pima Sm., ♀ aniluna Sm.) (54 a) is also similar, brown dusted with silvery blue, with white costal area that in basal area extends below the cell. Transverse lines brown indicated in darker part. Subterminal line white, interrupted. Fringes brown and mauve, spotted with white below centre. Hindwings white, brownish at margin. California and Arizona. *lucasi*.

T. vittamargo Dyar (54 a). Forewings black mauve with wide white costal streak, 2 reddish brown transverse lines indicated in dark part and violet-white mauve spotted anal angle with 2 small black marginal spots. Hindwings yellowish white. Mexico (Tehuacan). *vittamargo*.

T. tetragona Wkr. (= alessandra Sm., ♀ quadriplaga Sm., redota Fldr.) (54 b). Forewings white in ♂ with 2 black costal spots and olive-brown marginal area turning to mauve-grey outwardly. This extends below the cell to the outer median half, in which is the white subterminal line that is spotted with brown inwardly. Hindwings yellow-white, darker at margin. The ♀ is much more extensively brown and grey, only white at base, a large quadrate costal spot and a smaller one posteriorly. Hindwings ochreous brown. Texas, Utah, New Mexico, Arizona, Mexico; Jamaica, Cuba, Haiti. *tetragona*.

T. rufescens Hamps. (54 b). Forewings yellow-white, rufous in marginal area, glossy mauve subterminally, edged by a dark fuscous posterior transverse line behind which is a triangular yellow-white costal spot. Hindwings white, faintly yellowish at margin. Brazil. *rufescens*.

T. major Sm. (54 b). Forewings silvery white, olive-brown in inner half to end of cell. Small olive-brown stigmata. Spotted with olive-brown towards apex with nebulous grey below. Hindwings yellowish, brownish at margin. Canada, Colorado. *major*.

T. lanceolata Grt. (54 b). Forewings with olive-greenish ground suffused with silvery mauve. Costal area white with 2 olive-brown oblique spots at and behind the centre. Transverse lines outlined in silvery grey. Reniform stigma elliptical and somewhat whitish. Before the subterminal line that expands at its lower extremity, there are small black spots. Fringes leaden grey with white specks below apex and in centre. — ab. **lanceolatana** Strd. (= ab. 1 Hmps.) has the olive-brown oblique costal spots intersected by white. Texas, Arizona, Mexico. *lanceolata*.

T. bilimeki Fldr. (= ♀ mizteca Schs.) (54 b). This can be recognised by the collar that is brown with white base in ♂, widely white in ♀. The ♂ is olive-brown, more or less dusted with silvery violet, white costal streak in which before and behind the centre there may or may not be indications of transverse lines. The posterior one is often indicated by 2 olive-yellow streaks and again as a wide olive-brown oblique band. Anal area white with grey subterminal line therein. Hindwings white, narrowly brownish at margin. The ♀ is deep mauve with 3 white costal spots, the basal one long club-shaped, the central obliquely quadrate and the outer triangular. Hindwings yellowish, darker at margin. Mexico. *bilimeki*.

- axendra*. **T. axendra** Schs. (= *bilimeki* Drc. part.) (54 c). Of this species only the ♀ seems to be known and I have only ♀♀ before me. Forewings dark olive-brown, dusted with silvery violet, smaller and darker than the very similar preceding species. The white central spot on costa not edged outwardly in a straight line. It is extended below outwardly in 2 small points by the penetration of reniform stigma. Collar quite brown, hindwings dark brown. Mexico (City, Presidio, Guerrero, Zacualpan, Tehuacan).
- axendrana*. **T. axendrana** Strd. (= *axendra* ab. 1 *Hmps.*) (54 c) is a genuine species, smaller, more compact, head and thorax quite pure white, basal area densely peppered with white. The white anal patch is absent and instead only the white subterminal line is visible here in faint "W" shape. Fringes just below centre flecked with white. Hindwings not such a dark brown, more inclined to ochreous whitish. The ♂ closely resembles that of *aprica*, differing by the more heavily blue-grey dusted basal area, basal costal third dark brown to antemedian spot, absent orbicular stigma. The brown-grey marginal area barely projects towards the base below end of cell. Subterminal line very faint, only slightly visible in "W" shape in anal area, as in the ♀. The postmedian costal spot is widely attached to the dark marginal area. Hindwings yellowish, brownish at margin. I have before me 1 ♂, 4♀♀ from Tehuacan, 1 ♀ from Chihuahua (all in Mexico).
- disconnecta*. **T. disconnecta** Sm. (54 c). Head and collar white, thorax brown. Forewings pure silvery white, an olive-brown patch at base on inner margin, a second one posteriorly at lower end of cell to inner margin. Posterior transverse line indicated by a costal spot and 2 dots behind the cell. A large brown patch at apex with some smaller spots below. Fringes brown interspersed with white below apex and in centre. Hindwings faintly brownish, narrowly darker at margin. Arizona.
- sedata*. **T. sedata** H. Edw. (= *gonella* Streck., *niveicollis* Sm.) (54 c). Forewings yellowish white, more yellowish in ♀, somewhat variable in the brown colouration, in ♂ with a more or less developed inner marginal spot at base, which can also be entirely absent. A larger triangular spot posteriorly with apex in lower end of cell. A large brown costal spot at commencement of anterior transverse line. Orbicular stigma punctiform, reniform as a small ellipse. Marginal area more widely brownish. Hindwings brownish, darker at margin. The ♀
- cacola*. has a complete traverse brown antemedian band. California, New Mexico, Arizona. — f. **cacola** Sm. (54 c) is purer white, no orbicular stigma, with much smaller innermarginal spot and reduced brown in marginal area.
- gonellana*. New Mexico, Arizona. — ab. **gonellana** Strd. (= ab. 1 *Hmps.*) has also in ♂ a bar conjoining antemedian costal spot and inner marginal spot.
- bella*. **T. bella** B. & Benj. (= ♀ *cora* B. & McD. part.) (54 c) has also the base of scapulae white. Forewings white with blue-grey basal spots, mauve antemedian costal spot, that is conjoined with a deep grey inner marginal spot by an olive subterminal line. Between the blue-grey stigmata an olive-grey shade. Outer area mauve admixed with olive and blue-grey with large white triangular mark on costa before apex. The white marginal area intersected by an olive-yellow shade, wide at anal angle, very narrow at apex. Fringes white with dark spots at apex and above centre. Hindwings transparent white, narrowly darker at outer margin. The ♀ is very similar, larger, somewhat more darkly speckled and with darker hindwings. Arizona.
- areletta*. **T. areletta** Dyar (= *areloides* B. & McD.) (54 d) is very closely related to the subsequent *areli*, larger, with longer and more narrow wings. The large orbicular stigma with black circumscription is generally situated in the dark ground colour and white costal spot is larger. Arizona, Mexico (City).
- areli*. **T. areli** Streck. (= *redita* Drc. nec *Fldr.*) (54 d). A wide winged species. Base white, generally with faint orange hue, intersected by greenish grey double transverse lines and with 2 black dots, the one behind the other, marking the sides of orbicular stigma. Outer area mauve-brown with black reniform stigma with silvery blue core. A jet black spot with silvery blue centre inwardly below it. Subterminal line black with cream coloured edges, generally expanding at anal angle. Hindwings transparent white, blackish at apex. The ♀ is deeper fulvous at base, hindwings reddish grey-brown. Arizona and Mexico.
- aprica*. **T. aprica** Hbn. (= *alboater* Haw., *unocula* Frr., *biplaga* Guen., *tetragona* Drc. part.) (54 d). Forewings white, mauve brown in outer area and admixed with blue-grey. White area at costa extends to just before apex, it is angulated inwards at upper angle of cell and again at the lower one. Dark costal spots subbasally and before and behind the centre. Indistinct grey-blue transverse lines in basal area. Orbicular stigma black punctiform, reniform stigma as a dot. Subterminal line irregularly whitish. Fringes brown spotted with white in centre. Hindwings white, brownish at margin towards apex. The ♀ has costal spots conjoined with the brown area by oblique grey bands and larger stigmata. Hindwings with wider brown marginal band. Eastern
- apricana*. and Southern States to Texas and Arizona, Mexico, Guatemala, Honduras. — ab. **apricana** Strd. (= ab. 1 *Hmps.*) is a male form with costal area of base suffused with blue-grey and inner antemedian half as in ♀. — ab. **apricanoides** Strd. (= ab. 3 *Hmps.*) in contrast thereto is a ♀ with pure white basal area as in ♂ without grey in basal costal half and basal inner antemedian half. — ab. **ceyvestensis** Dyar is probably a local race from Florida with white head and thorax in both sexes, in the type the head is brown, centre of thorax and collar toned with grey in ♀.

T. abdominalis Grt. (54 d) has a brown body with fine white ringlets on abdomen. Forewings white, *abdominalis*, reddish brown in outer area, toned with olive. Costal area dusted with olive-brown, a brown streak in place of antemedian. Orbicular stigma a black dot, with white cuneiform mark posterior to centre, from which the silvery blue spotted anterior line arises. Small black sagittate marks before the white subterminal line. Hindwings brown. In ♀ the antemedian streak is connected as a wide band to the brown area. Hindwings still darker. Kansas, Texas, Colorado. — ab. **luta** Strd. (= ab. 1 *Hmps.*) is a ♂ form with reduced dark markings in basal *luta*, area. — ab. **mala** Strd. (= ab. 2. *Hmps.*) on the other hand is a ♀ form with basal area completely suffused *mala*, with brown.

T. flavipennis Grt. (54 d). Larger on the average than the preceding very similar species. Forewings *flavipennis*, more coppery brown with silvery grey sheen. The white is very restricted and limited to a basal inner marginal streak, a quadrate white costal spot in centre and a small triangular spot behind it. Other markings as in *abdominalis*. Hindwings dark brown with yellowish spot in disc. From Oregon and California. — ab. ♂ **discolutea** *discolutea*, Strd. (= ab. 1. *Hmps.*) has a much larger yellow discal spot on hindwings that extends to inner marginal nervure. — ab. **delutea** Strd. (= ab. 2. *Hmps.*) is a ♀ form with plain brown hindwings or with scarcely any yellow in disc. *delutea*.

T. arida Sm. (54 e). The white forewings have an olive-yellow tone in disc, marked with grey at base *arida*, with grey costal spot before centre. Outer area grey admixed with olive, no orbicular stigma, small grey reniform stigma and white quadrate costal spot behind centre. In ♂ this is conjoined with the white basal area, but not in ♀. Forewings peppered with blue-white subterminally, the yellow-white subterminal line is spotted with brown inwardly. Hindwings fulvous, darker at margin, in ♀ quite brown. Arizona.

T. micropis Drc. (54 e). Forewings silvery white, olive-brown in marginal half and grey in the same *micropis*, style as in *aprica*, but extending much further towards base on inner margin. Otherwise markings as in the latter and with similar ocelli-like silvery blue centred spot below cell. Hindwings pure white, brownish at apex. Brazil (Castro, Paraná).

T. semiatra Sm. (54 e). Forewings ochreous yellow in basal half, black and grey outwardly, peppered *semiatra*, with white. Posterior transverse line with yellow-white outer edge, expanding to a large patch at anal angle. Reniform stigma with indistinct white circumscription and with black centre in lower half. Subterminal line diffuse and with white scales. Hindwings ochreous brownish. Arizona.

T. apela Drc. (= ♀ *philomela* Drc.) (54 e). A smaller species with olive-yellow forewings, spotted black- *apela*, brown in postmedian with costal spot before centre. Orbicular punctiform and reniform stigma elliptical. The ♀ is peppered densely with olive-blackish on yellow-white ground with a large yellow-white costal spot in centre that encloses the two stigmata and with a smaller triangular spot behind it. Fringes intersected by white in centre and below the apex. Hindwings grey-brown, much darker in ♀. Mexico (Guerrero, Presidio).

T. destriata sp. n. (54 e) is very similar to the preceding, more pale brownish chocolate in basal area *destriata*, than olive-yellow. The large dark antemedian spot on costa is almost completely absent and in place a costal spot thrusts itself between the stigmata, extending obliquely almost to reniform stigma and then forming a deep black edge to the inner contour of the dark marginal area. Marginal area itself is more uniformly reddish olive-brown without the scattered yellow mottling of the preceding species. Hindwings pale grey. The ♀ is much darker than that of *apela*, the pale costal spot is quite absent, a dark costal spot extends between the stigmata. Hindwings paler than in *apela*. Mexico (Tehuacan).

T. ardoris Hbn. (= *duenna* Schs.) (54 f). In ♂ sex this species resembles *micropis*, forewings yellowish *ardoris*, white with double grey transverse lines in basal area, outwardly mauve admixed with fuscous, inwardly olive-green. A pale patch between the stigmata, the eyespot beneath is missing. The faint whitish subterminal line is spotted inwardly with brown and barely expands at anal angle. Hindwings yellow-white, darker at margin. The ♀ is only narrowly white at base, otherwise quite mauve-grey with large half elliptical costal spot, being somewhat hollowed out before the reniform stigma and with black costal streak in centre. Hindwings darker ochreous. Brazil, Paraguay, Argentine.

T. morides Schs. (54 f) also resembles *micropis*, the dark marginal area extending to before the ante- *morides*, median, the olive-green oblique spot before centre is conjoined to it. Reniform stigma invisible, subapical marginal area quite white, anteriorly fuscous mixed with olive-green. Hindwings yellowish white, darker yellow at margin. Brazil, Paraguay, Argentine.

T. ochrochroa Drc. (54 f) is a small ochre-yellow species. Transverse lines form wide pale brown costal *ochrochroa*, bands, the dark inner and postmedian areas olive-brown, dusted with grey. Posterior transverse line with blue-white edges, otherwise similarly marked to the preceding species. Hindwings ochreous yellowish. Argentine.

T. acerba H. Edw. (54 f) differs considerably from all preceding species. Forewings black-brown, suf- *acerba*, fused with leaden grey, peppered with pale grey in costal and anal areas. Reniform stigma small, elliptical

with grey circumscription. Posterior transverse line dark, subterminal line indistinctly scaled with black. Hindwings dark brown. California.

- phaenna*. **T. phaenna** *Drc.* (54 f). Forewings grey-brown, chocolate brown in marginal area, yellowish white costa at base. Stigmata with faintly paler surrounds. Indistinct darker brown transverse lines and with yellowish spot posterior to subterminal line at anal angle. Hindwings brown. Mexico.
- terminimaculata*. **T. terminimaculata** *Grt.* (54 f). Forewings grey peppered with brown, dusted with brown in marginal area. Posterior transverse line is a white outwardly concave line with a chocolate-brown crescent, edged outwardly by yellow, behind it. It extends from lower end of cell to inner margin and at costa consists of an oblique white streak. Hindwings fulvous. Massachusetts, New York, Illinois.
- dacia*. **T. dacia** *Drc.* (= ♂ *curvilinea* *B. & McD.*) (54 f). Forewings in ♂ peppered with brown on whitish ground. A deep brown crescent spot, behind which the shade is claret-brown, posterior to the semicircular arched white posterior line. Hindwings transparent whitish, yellowish at apex. The ♀ is darker with oblique wide, diffuse black antemedian, the white postmedian being only visible below the cell. Hindwings fulvous. Texas, Mexico, Panama.
- cratina*. **T. cratina** *Drc.* is very similar to the preceding species, but has a darker basal area of mauve-grey colour, peppered with fuscous with more distinct oblique antemedian. Orbicular stigma is a black spot, similarly the reniform. Behind the white postmedian, that is shaped as in the preceding species, there is a distinct comma-shaped, deep chocolate-brown spot with somewhat incurved upper end and which is outwardly edged by a second curved white streak. Hindwings brown. Mexico (Veracruz).
- phrygionis*. **T. phrygionis** *Hmps.* (54 g) also resembles the preceding, but has no orbicular stigma. Basal area is grey-white finely speckled with brown. Costa darker in basal half, coppery red in marginal area, grey towards the apex. Anterior transverse line double. Hindwings pale brownish, coppery red at margin. Argentine.
- jaliscana*. **T. jaliscana** *Schs.* (= *chea* *Drc.* part.) (54 g) commences a second group, in which on hindwings the upper median and lower radial nervule arise free from lower angle of cell. In all the preceding these are more or less distinctly stalked. Forewings white in basal half with large brown spot, that is green-grey below, in the basal half of costa. The outer half of wing is olive-brown, admixed inwardly with yellow. Reniform stigma "S" shaped, narrow and with white circumscription. Subterminal line with inner mauve-brown spots and behind it are silvery blue streaks along veins. Terminal line white. Hindwings white, brownish on veins and at margin; black-brown in ♀. Mexico.
- chea*. **T. chea** *Drc.* Generally speaking this resembles the previous species, but is smaller and the large antemedian costal spot is divided by white colour into two smaller spots. Anterior to white subterminal line, there is a 2nd dentate white line. Hindwings transparent white, brownish at margin. Mexico (Durango).
- behri*. **T. behri** *Sm.* (54 g). Forewings yellow-white, olive-brown in marginal area to centre of outer margin. Indistinct double transverse lines and 2 small brown costal spots in and behind the centre. Subterminal line yellow-white, also the fringes, that are spotted with brown at apex and anal angle. Hindwings brownish white, coppery brown at margin. California, Arizona.
- delecta*. **T. delecta** *Wkr.* (= *metallica* *Grt.*) (54 g). Forewings yellow-white with brown patch mixed with leaden grey at base on costa and a similarly coloured subterminal band with a silvery blue posterior transverse line therein having an inner olive-yellow edge. Also the subterminal line consists of silvery blue spots. In yellow-white marginal area there are isolated black spots. Hindwings pale yellow, spotted with brown at apex, in ♀ with brown marginal band; the basal costal spot in that sex is prolonged to an oblique band to the submedian fold. New Jersey to Florida and Texas. — The brown larva has black tubercles and white subventral spots. Both the front pairs of abdominal legs are missing. It feeds on Hibiscus.
- cretata*. **T. cretata** *G. & R.* (54 g). A smaller silvery white species with small grey costal spots above cell end and with olive-brown glossy coppery marginal area with 2 thin white dentate lines therein. Fringes yellow-white, brown at anal angle and apex. Hindwings white with faint brownish hue and coppery brown marginal band. California, Arizona. — f. **schwarzi** *Sm.* (54 g) is more boldly marked, grey costal spots before and in centre, with a grey transverse line before the centre. Reniform stigma grey with white circumscription, grey marginal area shaded inwardly with olive-yellow. New Mexico, Arizona.
- coquilletti*. **T. coquilletti** *Sm.* (54 h) is like the form *schwarzi* of the preceding species, but can be differentiated immediately by the black-brown hindwings. Outer marginal area is more widely yellow-white behind the grey nebulous subterminal area. Reniform stigma an elliptical yellow spot. Subterminal line marked with metallic blue towards the apex. Fringes yellow-white intersected by a grey line. California.
- eudryada*. **T. eudryada** *Sm.* (54 h). Forewings white, spotted on costa like the preceding species. Subterminal band very narrow, grey and admixed with olive. Marginal area white, shaded with golden yellow inwardly and intersected by a metallic blue subterminal line. Hindwings grey-brown, paler towards base. Arizona.

T. dorneri *B. & McD.* (54 h) is a very small species, that most closely resembles *cretata*. Forewings *dorneri*. white separated by an olive-yellow line on costa almost to apex from deep purple-brown outer area. Outer area extends from about centre of discal fold to the middle of inner margin. A whitish subterminal line with an olive inner edge is faintly discernible at anal angle. In the centre of the white costa there is a small dark triangular mark. Hindwings white tinged with brown at apex and margin. Texas.

Genus: **Hemispragueia** *B. & Benj.*

This Genus has recently been established for *idella*, which was described as a *Cerathosia*; it differs from *Tarache* by shorter palpi, a flatter scarcely arched frons, smoother scaling and the absence of the tuft on meta-thorax; further on the hindwings subcostal nervule is stalked with the uppermost radialis. Only 1 species:

H. idella *Barnes* (54 h). Forewings white with orange apical spot and numerous small black striations *idella*. and spots on costa and at inner margin indicating the position of the transverse lines; spots and streaks in cell indicating the stigmata. Hindwings orange-yellow. Arizona.

Genus: **Eugraphia** *Guen.*

Proboscis developed, palpi porrect, frons smooth; the scaly thorax interspersed with hairs but like the abdomen without tuft. Neuration with appendicular cell on forewings, is regular. Several brightly coloured southern species.

E. splendens *Drc.* (54 h). Forewings pale sulphur-yellow with "Y" shaped black transverse lines that *splendens*. unite at lower end of cell. Distally in upper half 2 spots and a wide oblique band from apex, in lower half an orange-brown and anteriorly two black spots, the latter with blue centres. Margin narrowly brown-grey. Hindwings orange with black apical spot. — f. **paraguayensis** *Strd.* (= ab. 1 *Hmps.*) (54 h) has whiter hind- *paraguayensis*. wings in ♂ sex, without the dark apical spot; in ♀ sex an oblique blackish apical streak; from Paraguay. The type occurs from Mexico to Ecuador and Columbia. — f. **extensa** *Strd.* deeper yellow, hindwings have not *extensa*. only an apical spot, but a 4 mm wide marginal band. Peru. — f. **seriata** *Strd.* from Brazil has a shorter marg- *seriata*. inal band on hindwings that is interrupted on lower median nervure, on underside it has a spotted band commencing at a spot on costa and extending to anal angle.

E. irretita *Hbn.* (= *melanogramma* *Perty*) (54 i) is similar but smaller, the postmedian appearing on *irretita*. costa as 3 black lines, thus forming a trident. Marginal area suffused with orange and with a wider grey sub-terminal band. Hindwings in ♂ transparent white, yellow at margin and with a small apical spot; in ♀ orange with wide black anteterminal band. Brazil, Porto Rico.

E. effusa *Drc.* (54 i) can be recognised by the wide black marginal area with greenish sheen, transverse *effusa*. lines partially interfilled with silvery blue, marginal band of orange hindwings very wide. Mexico to Panama.

E. trilinea *Schs.* (54 i) has grey-brown forewings bestrewn with greenish white and with 3 orange *trilinea*. longitudinal stripes, the central one furcated at lower end of cell. Hindwings black-brown, head and thorax orange. Mexico (Jalapa). *SCHAUS* is of the opinion that this is the ♂ of the following species.

E. obscura *Schs.* (54 i) has forewings unicoloured dark bronze-green bestrewn with white scales; head *obscura*. and collar orange. Hindwings black-brown. Mexico (Jalapa), described from 1 ♀.

Family: **Eutelianaë.**

There are in America a relatively small number of species of this peculiar group with its distinctive characteristics. As already mentioned in Volumes 3, 11 and 15 it is distinguishable by the lateral anal brushes of hair on abdomen and the simple frenulum in the ♀, which however consists of conjoined spines. The *Eutelianaë* differ from the subsequent *Stictopterinaë* by the absence of the upraised appression of scales in cell of forewings. Only very few Genera are represented and these are all very uniform in appearance, so that one realises at first sight that they belong to this group.

The larvae of only very few species are known and they seem to be of a similar construction to that of the palaearctic *E. adulatrix*. The larva of the north-american *Paectes pygmaea* *Hbn.* is green with yellow spots and feeds on Liquidambar. Very little is known of its morphology and it may be assumed that the insects, at all events of the Genus *Eutelia*, rest like *adulatrix* with the forewings folded longitudinally and the abdomen curved upwards.

1. Genus: **Eutelia** Hbn.

Proboscis developed, palpi fairly long, the 2nd segment very densely scaled. Antennae of ♂ with long pectinations in the american species, simple in apical third, basal segment with a large scaly spine. Thorax and abdomen with tufts. Forewings have a dentate outer margin with a more or less distinct excision below the apex and above the anal angle, so that the middle of the margin protrudes. Neuration is normal, hindwings with very short cell, veins 3 and 4 often somewhat stalked and vein 5 bold, arising close above the lower angle of cell. There are about 20 species in America. According to HAMPSON, the Genus should now be named **Phlogophora**.

Type: *E. adulatorix* Hbn. (palearctic).

abscondens.

E. abscondens Wkr. (55 a). Forewings pale brown in costal half, darker chocolate-brown towards the inner margin, with delicate white double transverse lines and a larger white, approximately triangular inner marginal spot, conjoined to which distally there is a round yellowish spot with brown edge. Nervures in median area with delicate white streaks. Between veins 5 and 3 in subterminal region there is a roundish blackish spot with white inner edge. Before the bluish grey-white apex there is a dark brown triangular spot. Hindwings semi-transparent white with wide black marginal band that merges into red-brown towards the anal angle; there is a short white intersecting line between 3 and anal angle. Larva, which is probably green, although the specimens preserved in spirit are pale brownish, has a blackish head with a pale "V" shaped marking. Foodplant is not indicated. It occurs from Mexico to Brazil.

pulcherrima.

E. pulcherrima Grt. (= *dentifera* Wkr.) (55 a) closely resembles the preceding and may be considered its representative in more northern regions. Ground colour is a much paler and more reddish brown, especially in inner marginal part. All the chocolate-brown area of the preceding species is a pale reddish here. Markings are otherwise approximately the same. Atlantic States (New York).

poecilatrix.

E. poecilatrix sp. n. (55 a) also closely resembles the preceding, but is larger and has wider wings. The brown colour is paler, more reddish, centre of costa white with a small reddish spot from which a nebulous line extends to lower angle of cell. The white inner marginal spot is considerably larger and approximately quadrate. The transverse lines are more distinct and purer white. The black postmedian spot is much longer and extends from 5 down to 2, where it merges in the yellowish grey subterminal band; its white edge upwards and inwards consequently forms a long hooked line, not a short crescent as in *abscondens*. The white anterior transverse line forms a sharp angle on median nervure and distinctly extends to costa, whilst in *abscondens* it terminates in a rounded arch on the median nervure. Hindwings as the preceding species. Mexico (Zacualpan). Type in the collection of DRAUDT.

pompejana.

E. pompejana sp. n. (55 a) most resembles *abscondens*, but the ground colour is a rich pompeian red, there is no white colour except for a white lineolet at the upper edge of the arch of the small black-brown ocellus that only extends from 5 to 4. The white striations on the veins are completely absent, the inner marginal triangle is yellow-grey, the distal round yellow spot is absent, the transverse lines are extinct except for short rudiments at inner margin. Apex and fringes are dark mouse-grey, the bluish area above the inner marginal spot is deeper slate-grey. The distinct white inner edge of the narrow, in this case dark red marginal area below apex of forewing is absent here. Hindwings transparent white with wide black marginal band without the white anal streak, with deeply dark fuscous fringes. Described from 1 ♀ from Zacualpan (Mexico), captured in June. Type in the collection of DRAUDT.

blandula.

E. blandula H.-S. (= *caustiplaga* Hmps.) (55 a) is another similar species, the representative on the Island of Cuba. Forewings fuscous admixed with grey, median nervure and its branches are white. Transverse lines are inclined to grey, not pure white; posterior to the very oblique anterior transverse line there is a grey-white band from costa to the lower angle of cell. The chocolate-brown oblique band before the centre of inner margin is narrower and darker than in the preceding species, the pale triangular spot distally inclines to yellow-grey. Otherwise the remaining markings are very similar to those of the preceding species. Only known to occur in Cuba.

jaguaria.

E. jaguaria Jones. Body pale reddish, admixed with purplish brown. Forewings reddish, anterior to the blackish antemedian from costa to vein 1 grey-brown, a dark shade in median area. The reddish reniform stigma is outlined by yellowish lines and is somewhat excurved distally. The posterior undulate transverse line is obtusely angulated on the discal fold and extends then obliquely inwards to inner margin. The wide postmedian area is pale reddish to the subterminal line that is undulate. Anteriorly there is the usual dark subapical triangular spot. Marginal area grey-brown. Hindwings white suffused with grey-brown in marginal half with traces of a postmedian and a subterminal line; on underside with a grey-brown discal spot. Wing expanse: 32 mm. Jaguarihyva (Paraná).

ablatrix.

E. ablatrix Gn. (= *rufatrix* Wkr.) (55 b) differs from the preceding by a much darker red-brown ground colour, which is suffused with blackish in basal costal half and in the oblique band before the centre of inner margin; the distal half of inner margin beyond is transparent whitish, intersected by dark oblique lines. The dark white edged subterminal spot is completely absent. The grey apical spot is small. Hindwings transparent white with wide blackish red marginal band. The ♀ is a still darker pompeian red, the transparent inner

marginal area is more densely dusted over and more yellowish. It occurs from Mexico to Panama and in the West Indies (Jamaica, Haiti, St. Lucia and Grenada).

E. chromatica Schs. Thorax and abdomen violet-brown, collar with 2 white lines. Forewings dark brown on costa and at inner margin, basal area with ochreous brown spots. Distally of the partially double anterior transverse line there is a wide white costal streak to centre of cell, that extends as a white line to the reniform stigma. Median nervure and branches 2—4 white; disc brown partially dusted with red with a white spot above vein 1. Centre of inner margin yellow-white and red. The longish reniform stigma is red and is partly edged with white. Posterior transverse line is white with black inner edge and distally of it there is a white line obliquely from costa to vein 7, thence with undulate dentations to 2 and from there extending as a black-brown shade to inner margin. A reddish subapical triangular spot has a white edge. At the silvery white marginal line 3 black spots between apex and vein 5. Marginal area black-brown in lower half with an ochreous yellow shade between 3 and the inner margin. Hindwings white in basal half, black-brown at margin, red towards the anal angle with white dentate line between 3 and the inner margin. Wing expanse: 30 mm. Guatemala (Cayuga).

E. cuprea Mschlr. (= *chrysotermia* Hmps.) (55 a). Forewings deep fuscous, suffused with grey in basal costal half, marginal area below vein 6 widely golden yellow dusted with red. The indistinct transverse lines are dark grey, the posterior line being double below the cell. Subterminal white in apical area, below yellow and indistinct. Hindwings pure white with wide fulvous marginal band enclosing a yellow subterminal. From Porto Rico and French Guiana.

E. albisecta Dgn. (55 b) is a smaller, insignificant species. Forewings grey-brown, admixed with whitish, a longitudinal white band on the discal fold to the postmedian. The narrow oblique band from before centre of inner margin is white with a double blackish antemedian anteriorly. The posterior transverse line white with inner golden yellow edge in costal area. Posteriorly a dark brown costal triangular mark. The subterminal is whitish, the apical area dusted with grey distally of it. Hindwings semi-transparent white with dark brown marginal band. Argentine (Tucuman).

E. albocristata Breyer. This is related to *albisecta*; palpi grey with black and fuscous spots. Thorax with long grey hairs with iridescent violet sheen. The 4th abdominal segment with a long white opalescent brush-like tuft. Forewings brown admixed with white, markings otherwise like *albisecta* with whitish apical spot. Hindwings transparent white, reddish black at outer margin. Misiones, Iguazú (Argentine).

E. apithana Dyar. (55 b). This also somewhat resembles *albisecta*, but it is a still more monotonous grey-brown with 2 indistinct whitish transverse lines and with a coppery shining spot behind the whitish edged reniform stigma. Subterminal white and only distinct towards the costa and before it in apical area a very oblique dark brown triangular spot, behind which the apex is somewhat dusted with grey. Hindwings semi-transparent white with very wide dusky brown marginal band and large discal spot. Mexico (Guerrero, Tabasco, Chiapas).

E. auratrix Wkr. (= *nattereri* Fldr.). Body brown with violaceous grey admixture. Forewings dark brown, dusted with grey. The dark anterior transverse line with whitish edges on both sides, acutely angulated on mediana. Reniform stigma narrow, black with white circumscription. Distally 2 small dark brown spots and posterior to the upper one a reddish yellow spot. In centre a white line edged on both sides with brown from the discal fold to inner margin, the area behind with violaceous hue. Behind the fine white postmedian there is an oblique chocolate-brown cuneiform spot from costa to vein 6, with a fine white subterminal line beyond. Hindwings semi-transparent white, brown on costa and in the cell with a black-brown marginal band dusted with violaceous; a postmedian is indicated and there are 2 streaks at inner margin and an oblique white streak below vein 2. Mexico to Brazil (Amazona, Espiritu Santo).

E. inconstriatrix Schs. is related to *auratrix*, but is darker and with unconstricted reniform stigma. Dark chocolate-brown scarcely, or not at all, shaded with red, occasionally with a small spot behind the brown discal spot. Anterior transverse line white, delicate, the posterior line similar approximating boldly towards the anterior line below the mediana. From apex at costa a dark brown cuneiform spot with white outline; the white lines conjoin at margin. Subterminal scarcely indicated, with an oblique brown spot distally over the corner of wing. Hindwings more blackish, white basally at inner margin to below the discal spot. Wing expanse: 27—29 mm. Costa Rica (Juan Viñas, Tuis).

E. maryna Schs. Head and collar dark grey, the latter with a chestnut red edge, scapulae show the same colour. Abdomen olive-grey, tufts and anal brush reddish. Forewings reddish yellow peppered with black on costa and in cell. Inner marginal area and postmedian dark brown with an orange-brownish spot before the antemedian. In centre of cell a black triangular mark with yellowish edge; at end of cell a black-brown quadrate spot. Reniform stigma with delicate black outline. The double posterior transverse line is black-brown, extending vertically to inner margin and at top edged outwardly with white, below with lavender-grey. Marginal area dark brown, contracting towards the anal angle. Subterminal white, angulated to margin on vein 6. Hindwings white in basal half, widely brown at margin with heavy discal streak. Wing expanse: 29 mm. Brazil, Rio de Janeiro, Itatiaya.

E. pyrastis Hmps. (55 b). Forewings fuscous, chocolate-brown in basal area below costal part; a yellow spot on inner margin distally of antemedian, marginal veins streaked with white, an oblique dark streak from

centre of costa; reniform stigma and posterior transverse line as in the preceding species. distally on costa the usual dark brown triangle with 3 small black spots below, each outlined by white. Apical area grey. Hindwings whitish in basal area, veins and marginal half brown with white anal streak. From Florida and the Bahama Islands.

dyari. **E. dyari** *nom. n.* (= *amatrix* *Dyar* nec *Wkr.*). Forewings pale reddish, the area between 1 and 2 and at apex slate-grey, a brown oblique band in basal inner marginal third having a white edge and outlining in an arch the grey area between 1 and 2. Posteriorly a inverted white arched line. Marginal area narrowly fuscous below, expanding above and edged by a white arch, that conjoins with an oblique line which extends to costa. The grey apex is intersected by a white line. The pale but shaded reniform stigma is crescentiform. Hindwings white with wide black marginal band, that merges into red towards the margin. Wing expanse: 32 mm. Described from 1 ♀ from Guerrero (Iguala) Mexico.

furcata. **E. furcata** *Wkr.* (= *distracta* *Wkr.*, *nattereri* *Drc.* nec *Fldr.*) (55 c). Forewings pale fuscous, admixed with grey-brown and grey. Anterior transverse line whitish with blackish outer edge, anteriorly a white line from cell to inner margin, the area between the two being a brighter red. A white oblique streak from costa to lower angle of cell. The whitish reniform stigma has brown and black dots above and below with a brown spot distally. In centre of inner margin a whitish spot and a blackish median line from beyond the cell to inner margin. The whitish postmedian is double and posteriorly below veins 5 and 6 small black spots with white edges. Apical area bluish white beyond the white subterminal and turning to red-brown in lower half. Hindwings brownish white, dark brown in marginal half, and with reddish tone towards anal angle and a white anal streak. Mexico and Haiti.

pertanda. **E. pertanda** *Dyar* (55 c) closely resembles *furcata*, but is rather considerably larger. The brown spot behind the reniform stigma is yellow and more extensive; the subterminal behind it is more curved outwardly; the small black spots between 5 and 3 diffuse outwardly and are indistinct, the spot below vein 6 is small and touches the subapical dark triangle. Hitherto only known from Colima in Mexico.

2. Genus: **Thyriodes** *Gn.*

Differs in the first place from *Eutelia* by the complete, not excised margin of forewings. Palpi are longer than in preceding, the 3rd segment is hairy on top. The scaly thorax has an open tuft anteriorly and posteriorly. Body sleek, abdomen with tufts on the basal segments, the anal brush is very short. Only 3 species.

Type: *Th. flabellum* *Gn.*

flabellum. **Th. flabellum** *Gn.* (55 c). Forewings pale chocolate-brown, somewhat more darkly suffused before and behind the black-brown transverse lines. The anterior line is very strangely curved; it is excurved from costa to vein 1, below vein 1 it forms a prone "S"; the area beyond to a vertical line, that touches the arch of the antemedian on the median nervure, is filled with deep velvety brown; then follows a vertical, undulate, median line that is shaded with dark brown inwardly. Reniform stigma indistinct. Postmedian line sharply angulated outwardly on vein 6 where it has a yellow-white upper edge and forms the outline to a dark triangular patch with two black spots outwardly. Hindwings grey-brown. Mexico, Guatemala, Panama.

dissimilis. **Th. dissimilis** *Drc.* (= *flabellum* *Drc.* part.) closely resembles the preceding, but differs anatomically in that it has not got the fold on the central tibiae of the ♂ filled and covered with scales like preceding species. Besides this the antennae of ♀ are ciliate, whilst in *flabellum* they have short pectinations. Forewings grey-brown, with very similar markings, the antemedian of a similarly curved shape; the large reniform stigma with black circumscription; on the undulate subterminal there are black dots above and below vein 5 and on the submedian fold. Hindwings black-brown with whitish basal area and a black and white streak at anal angle. Wing expanse: 32 mm. Costa Rica, Panama, Colombia.

terrabensis. **Th. terrabensis** *Schs.* is darker and more monotonous than *dissimilis*. Forewings dark violaceous grey, shaded with brown in basal area. The marking of the lines is very similar to the preceding, the anterior transverse line is more angulated outwards, not so roundly arched; beyond it there is a triangular black-brown spot on costa and a larger one at inner margin, the outer edge of which is vertical, the lower edge excurved and the inner edge oblique. Hindwings dark brown, with dark scales at anal angle. Wing expanse: 27 mm. Costa Rica (Terraba).

3. Genus: **Marathyssa** *Wkr.*

Differing from *Thyriodes* by the shorter 3rd segment of palpi and which is not hairy on upperside. A large scaly brush on frons. Metathorax with a partite tuft. Abdomen with tufts on dorsum of the last segments. There are 3 american species. *Marasmalus* *Grt.* is a synonym of the Genus.

Type: *M. basalis* *Wkr.*

basalis. **M. basalis** *Wkr.* (= *ventilator* *Grote*) (55 c). Body white admixed with fuscous. The white forewings suffused with brown. Subbasal line is a white streak with black edge having a red and black spot posteriorly,

the antemedian transverse line is indistinctly double, interfilled with white. A brown median line is indicated. The narrow white reniform stigma has a black dot at top and bottom. Also the postmedian line is double with white interfilling. Subterminal line white, dusted with blackish along the inner edge. The whitish hindwings are suffused with reddish brown with white subterminal and a red spot beyond on vein 2. Canada and the United States, southwards to Texas, westwards to Nebraska, Kansas and Colorado.

M. angustipennis Schs. (55 e). Head and collar grey, the latter with fuscous edge. Thorax fuscous *angustipennis*. with blackish bands. Forewings grey-white peppered with brown. Costa, inner margin and margin suffused with red-brown, with semi-transparent whitish streaks through the cell and the submedian. The anterior transverse line only distinct at costa and inner margin. A black, white outlined dot in upper angle of cell. Postmedian double at costa, then obsolescent except for a blackish spot on inner margin. Hindwings whitish, dusted with pale brown. Brazil (Castro).

M. inficita Wkr. (= *histrion* Grt.). The violaceous grey forewings are suffused with brown; there is fuscous *inficita*. dusting anterior to the blackish antemedian. Median area with white streaks, in the upper angle of cell a black triangular mark edged with white. Postmedian line indistinct, double, interfilled with white, interrupted. Subterminal line white and dentate, with a small brown band inwardly at apex. Hindwings white, dusted with brown. Wing expanse: 26—34 mm. A similar distribution to *basalis*. — f. **minus** Dyar is smaller *minus*. than name type, the pale patches in discal area, reniform stigma and anal area are more prominent, whitish. Wing expanse: 18—22 mm. Texas and Arizona.

4. Genus: **Aon** Neum.

Distinguishable by the absence of the proboscis; 3rd segment of palpi projecting. Antennae with long pectinations. Thorax with only a posterior open tuft. Abdomen without tufts. Forewings elongate and narrow. On hindwings veins 3 and 4 stalked. Only 1 species:

A. noctuiformis Neum. (55 d). Forewings grey with brownish striations and sparsely peppered with *noctuiformis*. black; a white streak through the cell, almost to margin, the lower marginal half with fuscous tone. Transverse lines absent, a black dot at end of cell. Hindwings white, dusted with brown towards the margin and with a small black discal spot. Texas.

5. Genus: **Paectes** Hbn.

Proboscis developed, palpi moderately long, the 2nd segment with hairs above and below. Antennae of ♂ bipectinate. Thorax with only an anterior open tuft. Abdomen devoid of tufts. Wings of the american species without special feature. Numerous, partly very similar, mostly brown species, often reminding one of the *Phylometrinae* Genus *Abrostola* in their markings.

Type: *P. pygmaea* Hbn.

P. devincta Wkr. (= *peculiaris* Blr., *murina* Drc.) (55 d). The ♂ has a somewhat lobiform process at *devincta*. anal angle of forewings. Reddish brown, somewhat suffused in basal area with violet-blackish, similarly at costa behind the postmedian and in centre of margin, with an oblique white-grey streak from apex expanding to centre of inner margin. Transverse lines rather indistinct, postmedian double, red-brown, obtusely angulated on nervure 6; a white dot in centre of cell and at close of cell 2 fuscous dots; black subterminal streaks above and below vein 6. Hindwings blackish brown, paler towards the base. From Mexico to Brazil (Amazonas and San Paulo). Common.

P. fovifera Hmps. closely resembles the preceding, but the anal angle of forewings is not extended; *fovifera*. in the ♂ however the upper angle of cell of hindwings is prolonged and there is a triangular somewhat obliquely ribbed cavity between the widely diverging veins 6 and 7. Forewings fuscous in basal area and very obliquely along the costa to apex, pale greenish below cell and at inner margin. Marginal half inclined to grey-white, brown at margin and toned with greenish at costa and inner margin. Markings otherwise as in *devincta*. In the ♀ the entire postmedian area is of green hue. Wing expanse: 26 mm. From Panama to French Guiana.

P. oculatrix Gn. (55 d). The grey forewings suffused with brown, along the costa with a wide reddish *oculatrix*. streak, white at base, with a triangular olive-greenish area above the inner margin, distally the antemedian that is only discernible in the inner marginal half; a large black double arch follows. Hindwings brownish. Canada and the United States. Larva pale green, head and underside somewhat bluish, the 5th segment is the stoutest, tapering off posteriorly; body irregularly spotted with white and with fine hairs. The larva clings to the underside of the leaf and eats irregularly shaped holes into it. It pupates in the earth in August and emerges in June of the following year.

P. semicircularis Hmps. (55 d) is very similar but smaller, it is without the reddish costal streak, on *semicircularis*. the other hand the greenish triangular area is prolonged into a wider oblique band extending to costa. Hindwings distinctly darker brown. From Trinidad (Caparo).

P. chrysoplaga Drc. (55 d) has the same style of markings as the two preceding species. Head pure *chrysoplaga*. white, body red-brown admixed with white. Forewings grey-white, fuscous at costa, otherwise partially flesh-

coloured. Beyond the antemedian there is a golden green spot on inner margin. In cell and at end thereof there are white dots, the discal one of which has a black dot above and below. The double postmedian is of the same arch-like shape as in *oculatrix*, interfilled with greenish, posteriorly a brown arched streak, then a white spot with a greenish one below just above the anal angle. Subterminal is only indicated, double, apically a white spot. Hindwings blackish brown. Peru (San Domingo).

circularis. **P. circularis** H.-S. exceedingly closely resembles the preceding, but the forewings are more violaceous grey, with dark brown and olive-yellow interspersions. The inner marginal half of the basal area and a streak below the costa almost to the margin are violaceous reddish. Antemedian double, obliquely from where vein 2 arises to the inner margin, the outer part bolder, black. The black postmedian line similarly arched to that of the preceding species. The grey subterminal very indistinct, posteriorly a white spot admixed with yellow and with a small blackish spot therein. Hindwings black-brown, somewhat admixed with grey. Wing expanse: 26 mm. British Guiana and Surinam.

curvilinea. **P. curvilinea** Schs. (55 e). Body dark brown, admixed with grey. The grey forewings suffused with brown with a paler somewhat reddish coloured area obliquely from the base through the cell to the whitish apical spot. The double antemedian line is very indistinct, simple below the submedian fold, black and dentate on vein 1 and almost to the base, whitish above. Both stigmata faintly reddish with brown surrounds. Postmedian in a similar arch-like shape to the preceding species, below vein 2 double. Above and below vein 6 black streaks. Hindwings whitish, dusted with brown, darker at margin. Costa Rica (Juan Vinas).

viridescens. **P. viridescens** Jones. Body reddish brown, admixed with dark brown, olive-green and white. Forewings greenish white, suffused at base with olive-green. The undulate antemedian line is double, posteriorly a delicate dark central shade that is angulated inwards on vein 1. The double postmedian is partially interfilled with green and with green suffusion round about it. Subapically a triangular mark; subterminal obsolete. Orbicular and reniform stigmata white with greenish admixture, the latter with outer black edge. Fringes pale brown with grey-brown checks. Hindwings pale grey-brown. Basal area more yellowish, the veins darker. Wing expanse: 28 mm. Alto da Serra, Santos.

flabella. **P. flabella** Grt. (55 e) is a smaller and insignificant species. Forewings grey, dusted with dark brown. The black antemedian is double, the outer part heavier, acutely angulated inwards on vein 1, with a white spot below the cell. Orbicular stigma is a pale spot; reniform a small grey lunule. Postmedian line also double, obtusely angulated on vein 6, then incurved. The pale grey subterminal is excurved in the centre with black streaks above and below vein 6 and a grey apical spot above. Hindwings glossy coppery dark brown with short black and white striations at inner margin. United States of America (Kansas).

pygmaea. **P. pygmaea** Hbn. (= *abrostolella* Wkr., *praepilata* Grt.) is very similar to *flabella*, but the forewings are much paler grey-brown, the stigmata purer white with brown surrounds. Reniform stigma has a brown central streak. The postmedian as in preceding species. Hindwings are also much paler brownish. Wing expanse: 24—28 mm. United States (Mississippi, Texas, New Mexico). The larva is apple green with 15—18 irregular yellow spots on each segment, the spiracles are orange in a brilliant yellow lateral line. It feeds on *Liquidambar ptyraciflua*.

declinata. **P. declinata** Grt. (55 e). Forewings grey, suffused with violaceous, especially in costal and marginal regions with the exception of the apex. Markings of the fasciae as in the preceding species. Stigmata grey with brown surrounds. The double postmedian acutely angulated on vein 6, beyond which are the 2 customary black streaks to the margin. The subterminal is quite indistinct, the apical marginal area is suffused with bluish white. Marginal veins blackened extending into the fringes. Hindwings whitish, veins and margin tinged with brown. From Colorado and California to Mexico.

acutangula. **P. acutangula** Hmps. (55 e) closely resembles *declinata*, but is immediately recognisable by the much darker brown hindwings. The markings are almost identical, the double transverse lines are interfilled with purer white, also the stigmata are white with brown surrounds. Reniform stigma has a fuscous central streak. The wing is more distinctly intersected by an oblique whitish streak from apex to centre of inner margin. The indistinct subterminal is whitish, irregularly dentate; the 2 black streaks above and below vein 6 are finer than in *declinata*. It has a black dot in the white apex. Fringes checked with white. Bahama Islands (Nassau).

abrostoloides. **P. abrostoloides** Gn. (= *producta* Wkr.) (55 e) differs from the preceding by the complete absence of the arched whitish oblique band from apex to centre of inner margin. Forewings grey, regularly dusted with brown. A yellow-white spot above the dentation of the antemedian line on vein 1. There are 3 black subapical streaks distally of the subterminal. Fringes checked with blackish. Hindwings black-brown, somewhat paler towards the base between the veins. In ♀ the yellowish white spot before the antemedian is absent. Canada and the United States.

fuscescens. **P. fuscescens** Wkr. (= *abrostoloides* Drc.) (55 f). In this and the following species, the postmedian is obtusely angulated instead of acutely on vein 6. The grey forewings are uniformly suffused with brown, the double antemedian is only faintly dentated inwards on vein 1. All the other markings as in the preceding species, but instead of 2 or 3 black streaks below the apex, there is only one black spot below vein 7. The

brown fringes are checked with blackish. Hindwings brown, paler towards the base, median nervure and branches around cell blackish; the white fringes are checked with black. Distributed from Mexico to Paraguay.

P. delineata Gn. (55 f) completely resembles *abrostoloides*, but can chiefly be differentiated by the ob- *delineata*.
tusely angulated postmedian line on vein 6. Canada and the United States, southwards to Alabama and west-
wards to Illinois and Missouri; it also occurs in Mexico. Larva yellow-green, with 8 interrupted yellow undulate
lines and yellow spiracles. It feeds on Jasmin.

P. lunodes Gn. (= *producta* Wkr., *burserae* Dyar) (55 f) is again closer to *acutangula* by the arched *lunodes*.
whitish oblique streak from apex to centre of inner margin. The postmedian however is only obtusely angulated
on vein 6; the antemedian has an acute dentation on 1 almost to the base and with a whitish streak above it.
In the subterminal region the usual 2 black streaks above and below vein 6 with a white apical spot distally.
Hindwings brown, whitish towards the base, veins dusky, fringes white checked with brown. Florida, Hon-
duras, Brazil (Orgel Mountains, San Paulo), Paraguay. It also occurs on the Bahama Islands, Jamaica, Cuba.
Haiti, St. Lucia, Grenada and Trinidad. The transparent green larva has numerous small yellow punctiform
spots and similar subdorsal and lateral lines; it feeds on *Bursera gummifera*.

P. arcigera Gn. (= *nana* Wkr., *murina* Drc.) (55 f). Forewings violaceous grey, dusted with brown *arcigera*.
with a similar whitish oblique shade to preceding species. The antemedian line forms a heavy black prone
"V" on vein 1. Instead of a reniform stigma there are 2 fuscous dots. Postmedian extends to the margin in
a black longitudinal streak distally of the obtuse angle on vein 6. The whitish hindwings are dusted with brown
in marginal area; veins blackish; fringes white, checked with brown. Mexico, Bahamas, Haiti, St. Thomas.

P. obrotunda Gn. (55 f). In this species there is on forewings a dark grey shade from cell to inner margin *obrotunda*.
behind the antemedian and before the pale oblique streak from apex to inner margin. Other markings precisely
like those of the preceding species. Hindwings brown, whitish towards the base but with dark veins. West
Indies and in Paraguay.

P. nubifera Hmps. (= *abrostoloides* Drc. *part.*, *murina* Drc. *part.*) (55 g). The grey forewings are suffused *nubifera*.
with fuscous with an oblique pale grey streak from apex to inner margin. Markings exactly as in the
preceding species; distally of the postmedian there are white dots on the veins and an arched black streak
below vein 6. Hindwings as in *obrotunda*. The ♀ has a more distinct yellowish white spot above vein 1, before
the antemedian line. Mexico and Costa Rica.

P. chlorophora Hmps. (55 g). A rather larger species. In the forms that now follow, the postmedian *chlorophora*.
is not angulated on vein 6, but only slightly curved. Forewings fuscous with golden green basal costal spot.
Before the antemedian a golden green band with a similar one behind the double postmedian line; distally
a dark triangular mark on costa. Posterior to the indistinct subterminal, there are the usual black streaks
above and below vein 6 with a pale apical spot above. Hindwings black-brown. West Colombia (San Antonio).

P. phaeoplaga Schs. (55 g). Head and collar black-brown, thorax fuscous. Forewings red-brown ad- *phaeoplaga*.
mixed with grey-white. The double transverse lines interfilled with grey-white; the antemedian without den-
tation on vein 1. The 2 fuscous stigmata with blackish surrounds. Behind the postmedian a blackish brown
indistinct streak between vein 2 and the anal angle. The black submarginal streaks are completely absent.
Hindwings dark brown with white fringes checked with brown. French Guiana.

P. eumicta Schs. (55 g). Forewings dark olive-brown, somewhat admixed with grey and subbasally *eumicta*.
with ochreous yellowish. Both transverse lines double, the postmedian interfilled with whitish; between them
a black central line arises behind the cell on vein 6. Both stigmata reddish brown with a pale and a black circum-
scription. The grey subterminal is undulate and dentate. Hindwings dark brown with ochreous yellowish
checked fringes. French Guiana.

P. nyctichroma Hmps. (55 g) closely resembles the preceding, but is larger. Forewings dark fuscous, *nyctichroma*.
suffused with black-brown. Both transverse lines double, the inner part of the postmedian is only partially
indicated. Above the centre of vein 5, a dark streak. Orbicular stigma is absent, reniform stigma narrow,
grey with fuscous central streak. The pale subterminal has a brown edge on both sides and below vein 3 it
forms 2 whitish dentations. Apex whitish with a short black streak below. Hindwings dark fuscous, somewhat
paler at base. Panama (La Chorrera).

P. endochlora Schs. (55 g). A very small species, recognisable by a yellowish green streak in centre of *endochlora*.
inner margin, otherwise very similarly marked to *eumicta*, but more heavily suffused with dark black-brown.
Orbicular stigma indicated by a grey dot; reniform by 2 black dots with grey surrounds. The 3 lines as in
eumicta. Hindwings black-brown, tips of fringes pure white. Described from Cayenne.

P. haematosema Schs. (55 h). Head and thorax admixed with white. Forewings olive-brown at base, *haematose-*
darker black-brown in median area and white in marginal region intermixed with olive-brown. even the margin *ma*.
itself is black-brown. The black transverse lines have white edges on averted sides. Orbicular stigma is a
white dot; the narrow reniform is olive-brown with white surround. The white subterminal terminates at

anal angle in a bright carmine spot. Hindwings are white in basal half with brownish veins and inner margin; outer margin black-brown with checked fringes. French Guiana (St. Jean Martin).

- glauc.* **P. glauca** *Hmps.* (55 h). Body grey admixed with pale olive-yellow and peppered with black like the forewings, the latter especially in median area. The black transverse lines are edged with olive-yellow on alternate sides, the postmedian is double. Stigmata olive with grey edges, both sometimes being confluent. An oblique olive apical band extends to vein 6, at apex a grey and black spot with pale inner edge. A row of black dots before the margin, the one on the submedian fold being much heavier. Hindwings pale dusted with blackish brown on veins and at margin; in the ♀ the hindwings are dusky. West Colombia, Venezuela, British Guiana.
- polia.* **P. polia** *Hmps.* (55 h). The violaceous grey forewings are bestrewn with grey-black. Transverse lines blackish, the postmedian being double. Stigmata brownish with first grey, then blackish surrounds. The blackish subterminal is indicated and double; there are black dots proximally on the discal fold and above inner margin. A heavier black marginal spot on the submedian fold. Hindwings white with blackish veins and marginal band. Fringes white and with black-brown checks. Paraguay (Sapucay).
- griseifusa.* **P. griseifusa** *Hmps.* (55 h). Body and forewings grey-white with brownish hue and peppered with black. Transverse lines black, the postmedian double with a third less distinct line posteriorly. The round stigmata have blackish surrounds; there are short black streaks above veins 5 and 6; a dark spot at apex and an undulate line before the margin. Hindwings black-brown, basal and inner marginal areas being paler. It occurs from Costa Rica to Brazil (Orgel Mountains).
- canofusa.* **P. canofusa** *Hmps.* (55 h). Head and thorax white, admixed with reddish brown; abdomen white with black dorsal spots at base and black ventral spots. Forewings grey-white, partially admixed with fuscous. Median area and apex remain pure white, the latter with a black dot. Transverse lines black, delicate, double. The white stigmata with brown surrounds and central spots; in lower part of reniform a black dot. Posterior to postmedian line a black streak on the discal fold. Subterminal line also double, being most distinct near apex. Hindwings brownish. Mexico (Zacualpan), Panama, Venezuela and S. E. Peru. It also occurs on St. Lucia and Dominica.
- panballa.* **P. panballa** *Dyar* closely resembles *canofusa*, but is less white and the lines are distincter and not diffuse. Brown-grey, the transverse lines are somewhat marked with metallic green; basal area dark turning green distally; somewhat pale violet-grey posterior to the black antemedian. Median area almost devoid of markings, stigmata obsolete. Posterior transverse line inwardly lilac-grey, outwardly with green edge. A black spot below the pale apex. Hindwings extensively blackish. Wing expanse: 29 mm. Panama (Chiriqui).
- areusa.* **P. areusa** *Wkr.* (55 h) is similarly marked to *canofusa*, but the colouration is entirely different. Body fuscous, intermixed with grey and dark brown. Forewings suffused with fuscous, admixed with green in basal area, at costa and inner margin. Discal area more inclined to grey. A green band before the antemedian. Behind the subterminal there is a black spot above vein 6 and anteriorly a black streak above vein 5. Hind-
- areusoides.* wings blackish brown with white and brown checked fringes. — In **areusoides** *Strd.* (= ab. 1 *Hmps.*) the black spot above vein 6 is absent, the green is restricted to basal area, the median area is traversed by a narrow pale oblique band. Panama, West Colombia, Brazil (Bahia).
- phloisma.* **P. phloisma** *Dyar* is of the same size with similar markings to *areusa*, but it is entirely without the fuscous colouration. Basal markings and the transverse lines are diffuse. Forewings grey, transverse lines edged with green. Basal area blackish at costa and inner margin, antemedian line indistinct, postmedian treble, its outer part dentate, followed by a brown-black streak below vein 6. Stigmata pale with black surrounds, reniform circumscribed by a delicate, faintly dentate, black median line. A black shade before the pale grey apex. Subterminal faint and pale. Hindwings blackish. Fringes spotted with white. Wing expanse: 25 mm. Panama (Canal zone).
- stigmatias.* **P. stigmatias** *Dogn.* Forewings ochreous brownish, striated with white, brown and rose, partially admixed with pale green. Cell traversed by a wide white band. Orbicular stigma with white surround. The black postmedian is partially double and extends in a semicircular manner to before the anal angle. The broad black subterminal arises on costa and appears again in a similar way at inner angle. Apex blackish. Between veins 8 and 6 white at margin. Hindwings reddish black, spotted with ochreous yellowish before the anal angle. Wing expanse: 26 mm. Panama (Lino).
- isabel.* **P. isabel** *Schs.* A very small species with pale grey-white forewings and black markings, only the head and thorax are a pale impure brownish. Antemedian line indicated by a few streaks, edged with brown below the median nervure, expanding and angulated on submedian. In place of a reniform stigma, 2 brownish grey dots at disco-cellular. Postmedian with purple-grey scales outwardly between veins 2 and 5; above vein 6 a heavy black line extends to the margin, with a short streak below the vein. Marginal area suffused with brownish grey. The white hindwings are dusted with leathery yellowish and have a wide grey-black margin. Wing expanse: 23 mm. Indefatigable Island in the Galapagos Archipelago.

P. sabulosa Schs. (55 i). Forewings grey-white, peppered and dusted with black-brown; a whitish basal *sabulosa*. spot below cell. All 3 transverse lines double, postmedian line interfilled with whitish, with still a third diffuse line distally. The round stigmata with white centres and blackish surrounds. The subterminal is also double and partially interfilled with white. The black streaks or spots at vein 6 are absent here. Hindwings whitish, dusted with brown, with whitish marginal spot before the anal angle and white fringes. West Colombia, Brazil (San Paulo).

P. indefatigabilis Schs. Body whitish, collar anteriorly cinnamon-brown, with grey-black edge. Ab- *indefatiga-*
domen suffused dorsally with grey-brown. Forewings pale grey at inner margin, widely deep mouse-grey in *bilis*. costal area. The delicate black antemedian line is double, it is accompanied by a wide mouse-grey shade, the median area distally obliquely white to costa, traversed by a fine double median line. Orbicular stigma is a small black oval, reniform is indicated by 2 fuscous dots at the extremities of the disco-cellular nervure. Postmedian line double and distinct, black at costa, cinnamon-brown from vein 7 to inner margin with mouse-grey patchy dusting posteriorly and a black streak below vein 5. Subterminal line irregularly spotted, brown. The whitish marginal area suffused with grey, except at apex; between veins 6 and 7 a black line extends from postmedian to margin. Fringes white, spotted with brown-grey. Hindwings whitish, suffused with brown and with blackish brown margin. The ♀ is more uniformly grey, the antemedian line simple and with darker shading. Wing expanse: 24 mm. Galapagos Archipelago (Indefatigable and South Seymour Islands).

P. albescens Hmps. (55 i). Head, thorax and abdomen white, somewhat tinged with brown. Forewings *albescens*. white peppered with brown. Transverse lines black, the antemedian with brown inner edge, angulated acutely on vein 1 to the base; the median line double below the cell, the postmedian similarly double. The large stigmata circumscribed by black, with olive colouration in centre, reniform open at top, dusted with black distally. Subterminal indicated by small black dots inwardly and by black streaks on veins 3—1. Hindwings white, black-brown in marginal area, median nervure and cell nervules blackish, fringes white. Honduras, Colombia.

Subfamily: **Stictopterinae**.

An exhaustive description of this subfamily, written by Dr. SEITZ himself is to be found in Vol. XI, p. 365. It is mainly indo-australian, with a smaller representation in Africa. In America there are only 4 species to be classified here.

They are relatively close to the *Euteliinae* and also in this case the frenulum of the ♀ is simple. It differs from the preceding subfamily by the absence of the lateral anal tufts and by the presence of an upraised appression of scales in cell of forewings.

1. Genus: **Stictoptera** Gn.

Readily distinguishable by the unusually long and narrow forewings, that have a very oblique margin. Proboscis developed, palpi erect, the terminal segment thickened, frons with scaly tuft. Antennae long, ciliate in ♂ with a cluster of scales on basal segment. Thorax scaly and with a tuft. Forewings with appendicular cell; on hindwings veins 3, 4 and 5 arise from lower angle of cell.

Type. *St. cucullioides* Gn. from India.

St. fenestra Gn. (55 k). This and the following species are very alike, but here the grey colour is predo- *fenestra*. minant. Forewings pale grey, peppered with black with a somewhat hyaline cuneiform spot between the cell and the submedian fold. Numerous undulate transverse lines, partially black, partially brown traverse the wings. The fuscous reniform stigma is outlined by ochreous yellowish. Hindwings hyaline iridescent bluish with wide black marginal band. From Cuba and Brazil (Para, New Freiburg).

St. vitrea Gn. (= phryganealis Wkr., fenestra Drc. nec Gn.) (55 k) is very similar to the preceding, but *vitrea*. browner in tone; orbicular and claviform stigmata, that are absent in *fenestra*, are indicated by rusty brown patches with pale grey surrounds. The other markings are all very similar. Hindwings are also the same. In the ♀ the wings are shorter and on forewings markings are more distinct with fuscous spots at base and in centre of costa and behind the postmedian line. Mexico, Costa Rica, Panama, Brazil; also on Jamaica.

St. clara Cr. (= diaphana Gn. subaurata Wkr. steirialis Wkr.). Apex of forewings in ♂ of this and the *clara*. following species rather less extended. Forewings dark brown with violaceous grey sheen. Antemedian and postmedian lines double with a simple black median line between, before which a fuscous line indicates the outer edges of orbicular and claviform stigmata. Reniform stigma laterally edged by brown. Distally of the dentate black subterminal line there is a row of small red-brown spots. Hindwings as in preceding species. The ♀ (55 k) is more brightly coloured and with bolder markings. Both bands behind the two transverse lines are much darker, the anterior one being almost black. The outlines of orbicular and claviform stigmata are black, a white spot distally of the subterminal line between veins 2 and 3. — **phryganoides** Wkr. is a much more greyish, *phryganoides*. less brown form. British Guiana, Brazil (Para, Ega, Rio Negro).

*heterogram-
ma.*

St. heterogramma *Hmps.* (55 k). Hitherto only known in ♀ sex. It is another similar species. Forewings olive-grey, dusted with reddish brown. Marginal area a purer fuscous, antemedian line very boldly incurved at inner margin, the black median line that has a white outer edge, extends more obliquely and is curved. Reniform stigma has first a white, then a brown surround. The postmedian double transverse line is interfilled with whitish; distally of it there extends from costa, before the apex, a dark shade that has a whitish inner edge, to the margin on vein 3. The hyaline hindwings have black-brown veins and marginal band. British and French Guiana.

Subfamily: **Sarrothripinae.**

Also this subfamily is relatively poorly represented in America. It is fairly close to the 2 preceding subfamilies. The frenulum of the ♀ now again consists of several spines that are not conglomerate. The retinaculum of the ♂ is bolt-shaped. cell of forewings, as in the *Stictopterinae*, with an appression of upraised scales. Proboscis is in general well developed, only in the Genus *Iscadia* it is rudimentary. Palpi long, terminal segment often thickened. America is the home of some relatively large species, mostly however these are small insects. The larvae have all the usual pairs of legs and are sparsely haired. Pupation takes place in a boat-shaped cocoon.

1. Genus: **Characoma** *Wkr.*

Proboscis developed, palpi with long terminal segments, antennae ciliate. Thorax scaly and with a large tuft posteriorly, also abdomen with 2 basal tufts. The stumpy and wide forewings bulge forward at base of costa, they have a long and a narrow appendicular cell. Vein 4 is absent on hindwings, as it anastomoses with vein 3; 3 and 5 are stalked. Only 2 species are found in America, whilst the Genus is widely distributed otherwise over India and Africa.

Type. *Ch. albulalis* *Wkr.* from Borneo.

nilotica.
nigrinotata.
nigrimacula.
submediana.
basibrunnea.
albifascia.

Ch. nilotica *Roghfr.* (= *chamaeleon* *Mschlr.*, *littora* *B.-Bak.*, *laurea* *Drc.*) (55 i). A highly variable small species of almost universal distribution (compare Vol. 3, p. 290, Vol. 11, p. 385 and Vol. 15, p. 180). Forewings grey intermixed with brownish black. Transverse lines and stigmata described in Vol. 3. All the forms mentioned therein, as the following, also occur in America: **nigrinotata** *Warr.* (55 i) with black antemedian band, — **nigrimacula** *Warr.* with round black basal spot at costa, — **submediana** *Strd.* with black central spot in submedian area and — **basibrunnea** *Warr.* with brown basal area and inner margin. A form with pure white wide antemedian band and brownish postmedian area is named — **albifascia** *f. n.* (55 i). The species occurs in America from Texas right through Mexico, Honduras to Costa Rica. It is also found on the Bahama Islands, in Cuba and Porto Rico. The larva feeds on *Tamarix articulata*.

deleta.

Ch. deleta *Hmps.* (55 i) has an ochreous whitish body. Forewings are brownish with 3 very indistinct transverse lines and a subterminal row of dark dots. Marginal area somewhat shaded. Hindwings transparent white, brownish in marginal area. Only 1 ♂ from Peru (Calloa) is known.

2. Genus: **Pardasena** *Wkr.*

This almost exclusively african Genus is represented in America by 1 species. It differs from *Characoma* by the absence of a tuft on thorax, abdomen has a small tuft only at base. On hindwings vein 4 is also absent, 3 and 5 arise from lower angle of cell, otherwise everything is like in *Characoma*.

Type. *P. roeselioides* *Wkr.* from Africa.

miochroa.

P. miochroa *Hmps.* (55 i). An insignificant, small species with greenish grey forewings bestrewn with reddish brown. Transverse lines blackish, the anterior one double, a whitish patch containing 2 black dots at disco-cellular nervure. Subterminal line grey with brownish black edges on both sides; a few minute black dots at margin. Hindwings uniformly black-brown. Described from Colombia.

3. Genus: **Sarrothripus** *Curt.*

This mainly indo-australian Genus is represented in Europe and Asia and also in America by one representative. The details of the Genus are given in Vol. 3, p. 289 and Vol. 11, p. 390.

Type: *S. revayana* *Scop.*

revayana.

S. revayana *Scop.* occurs in its innumerable forms in N. America from Canada to California and Arizona. The species is fully dealt with in Vol. 3, p. 290 and illustrated in a number of forms on pl. 53 c and d.

4. Genus: **Lophosema** *Hmps.*

Proboscis rudimentary and not able to function. Palpi very long, somewhat enwidened at terminal, frons with tuft, ♂ antennae faintly serrate and ciliate. The scaly thorax has an appressed tuft and also the

abdomen bears small tufts on the basal segments. Forewings narrow, apex rounded. Forewing with long narrow appendicular cell. Hindwings with normal neuration. Only 1 species:

L. purpurascens Schs. (56 a). Body violaceous grey. Collar and scapulae with fuscous edge. Forewings *purpurascens*, violet-fuscous with black striations. Stigmata with ochreous yellowish centres and red-brown surrounds, reniform protracted outwardly to a point. In centre of inner margin a narrow cuneiform grey streak. The dark brown postmedian line is edged with grey on both sides at costa, but only outwardly at inner margin, it has several acute dentations. Subterminal line is yellowish white with black streaks anteriorly on costa and at inner margin. Fringes brown with yellowish spots. The whitish hindwings are dusted with brown, the interstices between the veins are somewhat transparent, black and white streaks before the anal angle. Costa Rica and French Guiana.

5. Genus: **Poliothripa** Hmps.

Resembles the preceding Genus, but proboscis is fully developed, frons with a conical process. Thorax scaly and without a tuft. Otherwise everything as in *Lophosema*. Only 1 species:

P. ameria Drc. (56 a). The whitish body admixed with brown and black. Forewings whitish, bestrewn *ameria*, with brown-black. Antemedian line double, postmedian simple, both commencing in heavily marked spots on costa. Reniform stigma is a black crescent with white outline; the black subterminal line is indistinctly double, distally of it a blackish nebulous spot between veins 4 and 3. Fringes with brown and white checks. Hindwings white, brownish in marginal half and on veins. Guatemala.

6. Genus: **Sebagena** Wkr.

Proboscis absent. Palpi long like in the preceding Genera. Thorax clothed with scales and hairs and with open tufts anteriorly and posteriorly. Abdomen with dorsal tufts. Forewings with rectangular apex, margin faintly undulate, neuration as in preceding. Several medium large species. According to HAMPSON, the Genus that hitherto was known as *Pucialia* Wkr., should now be known as **Sebagena** Wkr.

Type: *S. furcifera* Wkr.

S. argentea Wkr. (56 b). Body and forewings grey-white with brown scales and striations. A black- *argentea*, brown streak proceeds from costal base below mediana to postmedian line and a second one parallel thereto from before centre of costa to discal fold, where it meets a similar oblique band proceeding from apex. Both longitudinal stripes outwardly have a metallie green sheen and there are a few green scales also in centre of inner margin. The whitish hindwings are tinged with brown, which is heavier in marginal region. Honduras.

S. furcifera Wkr. (56 b). Body and forewings grey-white admixed with purplish brown. A black streak *furcifera*, from costal base, where vein 2 arises, divides into an upper and a lower branch. A brownish costal shade indicates antemedian transverse line, the postmedian is black-brown and partially double. A black dot in centre of cell, a small crescent at disco-cellular. Subterminal line white and dentate. Hindwings transparent white, veins and margin brownish. Mexico, Honduras, Costa Rica, British and French Guiana.

S. mariva Dogn. (= *cristata* Drc.) (56 b). Like *argentea* this species has metallic green streak-like scaling, *mariva*, but only the lower of the two black-brown longitudinal streaks is present. On the other hand there is a distinct double antemedian transverse line. Hindwings as in *argentea*. Costa Rica, West Colombia, Venezuela and Peru.

S. chlorographa Dogn. (56 b). Forewings brownish white, admixed with scattered deeper brown. A *chlorographa*, stripe in centre of inner margin, a short stripe below base of cell, a spot at end of cell and an oblique stripe under it, are all green. Antemedian transverse line is merely indicated. Orbicular stigma with yellowish centre. The dentate postmedian line is black with white inner edge, the subterminal line is white, dentate with black streaks subapically before and behind it. Hindwings transparent white, brownish on veins and at margin. Fringes white. French Guiana.

S. acronyctoides Schs. Palpi ochreous whitish with lateral black streaks at base. Body whitish grey *acronyctoides*, admixed with black. Vertex and collar black in centre. Forewings white-grey, silvery behind the basal area, the latter peppered with black. Anterior transverse line fine, black, undulate, excurved with a straight bold black line distally; it proceeds obliquely and does not extend to inner margin, above it there is a subcostal black streak, a small spot in the cell and another below it. A slate-grey shade extends above median nervure to beyond the cell. A black spot on disco-cellular that is dentate inwards proximally. Postmedian line black, curved around the cell, undulate from vein 3 to inner margin. Distally of it a grey-brown shade from vein 3 to 7, thence obliquely to costa. Subterminal line irregularly white, peppered with black distally on costa. Black dots at margin in interstices between the veins. Fringes with darker spots. Hindwings semi-transparent white, yellowish at costa. Wing expanse: 43 mm. New Freiburg.

S. poliopepla Hmps. (56 c). Forewings grey, suffused with brown except at base and in marginal area *poliopepla*, and peppered with black. Basal area remains a purer whitish. Transverse lines black, the postmedian double,

Towards the end of cell there are 2 black dots with pale surrounds. There are a few short black streaks subapically behind the whitish dentate subterminal line. Brazil (Rio de Janeiro).

metaphaea. **S. metaphaea** *Hmps.* Head and thorax pale reddish white, abdomen dark brown suffused with grey. Forewings white admixed with pale reddish, chocolate-brown and blackish. Costal area chocolate-brown from antemedian line running to a point at apex, also cell in median area. Transverse lines black, postmedian double and brown distally. Behind the antemedian a small black spot below the cell. The round stigmata whitish with red-brown core. A small black arched streak at end of cell. The subterminal line is double and chocolate-brown. Hindwings dark chocolate-brown with coppery gloss. Wing expanse: 40 mm. Described from 1 ♂ from Jamaica.

canalalis. **S. canalalis** *Dyar.* Described from one ♀. Head wood-coloured, thorax paler reddish. Forewings pale reddish brown to the silvery postmedian line that has a rusty brown inner edge. Distally of it there is an "8" shaped mark filled with silvery grey between the subcostalis and vein 3. Outer area is olive-green with dark olive-grey marking. Distally an undulate dentate brown line extending backwards to postmedian on vein 3, it is edged outwardly by silvery grey. Behind it there is a black-brown line, that forms rings between veins 6 and 4. There are 2 cinnamon-brown apical streaks. The subterminal is whitish, undulate and dentate. Hindwings semi-transparent white with veins brownish in marginal area. Wing expanse: 31 mm. Campo Bello, Rio de Janeiro.

rectilinea. **S. rectilinea** *Dogn.* (56 c). Head and thorax dark brown, admixed with grey. Abdomen grey-brown. Forewings grey-white, suffused with dark violaceous brown and sparsely peppered with black. The black antemedian line is straight with white inner edge. Postmedian is double, interfilled with white, with a dark shade posteriorly and an outer white dusted shade. Before the margin there are heavy black streaks with white inner edges. Hindwings whitish, fairly heavily brownish towards the margin. French Guiana.

similis. **S. similis** *Drc.* (56 c). Forewings brownish white, densely peppered with darker speckles. A cuneiform black-brown, golden green spangled mark at base of costa and a similar mark below mediana. Transverse lines black, partially double and interfilled with patches of golden green. The large stigmata with black surrounds and between them a double, heavily dentate median line. There are black streaks towards the apex behind the double indistinct subterminal. Hindwings dark brown with black and white streaks on inner margin towards anal angle. Mexico, Costa Rica, Venezuela.

purissima. **S. purissima** *Dyar* (56 d). This is a handsome large species, for which, on account of slight variations, RICHARDS created the Genus: **Boryzops**. It is white with sparse dark speckles. Collar and scapulae brown. Forewings with a long black-brown basal cuneiform mark on costa, outlined by the antemedian, which is also interfilled with brown at inner margin. Here and there yellow-green spots are interspersed. Reniform stigma with fine black surround. Orbicular stigma is punctiform. Postmedian line commences in a heavy black oblique streak, that continues in a stripe to the margin. There is a second streak above and distally thereof yellow-green spots. The white hindwings are dusted with brownish and with a dusky margin. Mexico. I have a form before me, that is completely suffused with chocolate-brown and which I denominate: — **ciocolatina** *f. n.* (56 c). It is from Misanla and the type is in the collection of DRAUDT.

7. Genus: **Gadirtha** *Wkr.*

Proboscis fully developed. Palpi long and sleek, somewhat thickened at tips. ♂ antennae with fascicles of cilia. Thorax scaly with a small tuft posteriorly, abdomen tufted. Forewings with round apex, neuration as in the preceding species. All indo-australian, except for a few species.

Type: *G. inexacta* *Wkr.*

candezei. **G. candezei** *Drc.* (56 d). The grey forewings have a red-brown costal area and are peppered with black. Transverse lines very indistinct. In place of stigmata some upraised appressions of scales in centre and at end of cell. There are small fuscous spots before and behind the pale subterminal line. Hindwings transparent yellowish white, veins, costal and marginal areas dusted with brown. Mexico, Guatemala, Costa Rica.

commixta. **G. commixta** *Dogn.* (56 d). A very dark black-brown species with pale blue-violet sheen. Basal area paler, the dentate transverse lines black, postmedian double with slightly paler interfilling. Orbicular and reniform stigmata indicated by black dots with yellowish ochre ringlets. Behind the pale dentate subterminal line, there are sharply pointed black streaks. Hindwings white basally with very wide black-brown marginal band. Bolivia (Rio Songo).

8. Genus: **Casandria** *Wkr.*

Differing from the preceding Genera by the short porrect terminal segment of palpi. Thorax scaly, no tufts, abdomen with small tufts on central segments. Forewings long and narrow, with smooth margin and a long narrow areole. Hindwings enwidened in many of the species with a flocculent tuft of hairs between the upper median nervules. A large number of small, externally rather similar species. The Genus is a purely american one.

Type. *C. emittens* Wkr.

C. ferrocana Wkr. (= *nigriscripta* Wkr.). This is the only species in which the ♂ antennae have long *ferrocana*. pectinations. Forewings white with the exception of the costal area, which is dusted with reddish. Transverse lines black, distally of the postmedian a reddish diffuse double line. The reniform has a red centre and a black surround. Subterminal is a dentate, diffuse reddish shade. Hindwings transparent white, veins and margin brownish. Wing expanse: 26 to 30 mm. Jamaica, Cuba, Haiti.

C. nigropuncta Drc. (56 d). The ♂ has on the underside of forewings a flocculent tuft of hairs below *nigropuncta*. base of cell. In the anal area of the enormously enwidened hindwings with their truncate apex, there is an extensive vestiture of felty hairs behind the cell in apical area. Forewings whitish, sparsely peppered with black, with delicate black transverse lines and reddish brown diffuse lines in basal area and behind the postmedian. Reniform stigma is a reddish dot in a finely drawn black encirclement. Hindwings transparent white, faintly brownish at outer and inner margins, the hairy vestiture being black. The ♀ is somewhat darker. Distributed from Costa Rica to Brazil.

C. melanographa Hmps. is much smaller and darker than the preceding species and has no brush of *melanogra-* hairs on underside of forewings. On hindwings the vestiture of hairs is arranged in 3 longitudinal stripes and *pha*. the anal angle is rounded; in *nigropuncta* it is lobiform. Forewings brownish white, dusted with brownish red except in apical costal half. Otherwise markings are similar to those of the preceding species, but close behind the antemedian there is another irregularly dentate median black line. There are 2 black annulate marks behind the large round stigma that has a black centre. The stripes of felt-like hairs are ochreous yellowish on the transparent white hindwings. Wing expanse: 32 mm. British Guiana.

C. amplipennis Hmps. In this and the following species, the felt-like vestiture of hairs is absent on *amplipen-* the wings. Forewings white, peppered with brown and with a reddish brown tone in basal and marginal areas. *nis*. The black antemedian line is very boldly dentate outwards in the cell. Reniform stigma round and with reddish core. Median and postmedian lines similarly black and dentate. Subterminal reddish and indistinct. Hindwings with somewhat lobiform anal angle, transparent white with costa and margin brownish, duskier in ♀. Wing expanse: 36—38 mm. Brazil (San Paulo and Rio de Janeiro).

C. emittens Wkr. This is the genotype, of which the original specimen is unfortunately no longer in *emittens*. existence and the description is scant. ♀ very pale reddish brown, thorax brownish anteriorly. Forewings sparsely peppered with black, with an indistinct greenish tone and with black costal streaks. Transverse lines almost extinct with the exception of the one behind the reniform stigma, which is brown, straight and not oblique. It is accompanied on its inner side by a black line, that emits a black streak to the outer margin; this streak conjoins with a greenish band, that arises from a large grey-black costal spot. Distally of this 2 black dots and a black streak, that conjoins with the third of the black and white submarginal dots. Orbicular and reniform stigmata and a spot behind the latter circumscribed by white. The orbicular stigma is vertical and not slanting. Hindwings iridescent whitish, semi-transparent with wide brownish margin. Length of body 16 lines. Wing expanse: 22 lines. Jamaica; in the collection of SAUNDERS.

C. olivaris Hmps. (*Dyar ined.*) (56 e). Forewings yellowish green, basal and marginal areas somewhat *olivaris*. peppered with brownish. The fine black transverse lines dentate. A row of black cuneiform spots before the subterminal line. The whitish hindwings tinged with brownish. Veins and marginal area dusky. Mexico.

C. chlorotica Schs. Very similar, but larger than the preceding species and with a further row of small *chlorotica*. black dots behind the subterminal line. Forewings are inclined to be more reddish brown sparsely peppered with black on the olive-green ground. A reddish band behind the postmedian. Hindwings brownish white, duskier on veins and at margin. Costa Rica and Colombia.

C. phoenicias Hmps. Body and forewings dark red-brown, the latter suffused with violaceous grey, *phoenicias*. admixed with grey behind the cell. Transverse lines black, the anterior one interrupted, the posterior line with whitish outer edge. The round stigma has a white centre and black surround, a black streak anteriorly on discal fold. The grey subterminal line is double below the discal fold. Hindwings whitish, brownish at margin. Apex white. Wing expanse: 38 mm. Panama (Lino).

C. purpurascens Schs. (56 e). Body brown, admixed with grey. Forewings reddish yellow, suffused *purpuras-* with dark violaceous reddish brown with the exception of the basal area and the inner postmedian half that *cens*. retain the paler colour. The dark transverse lines are lined with ochreous, the double postmedian is similarly interfilled. Stigma reddish yellow with dark brown core and surround. Subterminal line ochreous yellowish, with black streaks subapically. Hindwings dark brown with white tips to the fringes. Costa Rica.

C. abseuzalis Wkr. (= *nigroguttata* Grt., *smithii* Mschlr., *tumidicosta* Hmps.) (56 e). Body and fore- *abseuzalis*. wings white with pale reddish brown tinge, somewhat more yellowish on forewings. The blackish transverse lines are simple, dentate, extending obliquely. A small black spot with white core at end of cell. A row of small black dots subterminally, the submedian one being heavier. Hindwings transparent white, ends of veins and margin black-brown. From Florida and Brazil (Bahia, Rio de Janeiro). Also occurring on the Bahama Islands, Cuba, Porto Rico and Grenada.

- fugax*. **C. fugax** Dyar. Forewings fairly dark, dusted with impure grey and darker veins. Fasciae very fine, black, antemedian curved, the faint dentate median line is only visible below the cell, the postmedian is most indistinct. The stigma is round with reddish central dot, the small subterminal spots are diffuse. Hindwings pure white. Wing expanse: 26 mm. Panama (Cabima, Porto Bello) in May.
- illegitima*. **C. illegitima** Dyar. resembles *fugax*, but is still darker and dusker grey. Hindwings opalescent and transparent, suffused with smoky blackish and dark veins. Wing expanse: 25 mm. Panama (Cabima).
- murora*. **C. murora** Dyar. Forewings dark grey, marginal area widely paler with small sagittate subterminal spots. Basal area somewhat darker, outlined by the curved antemedian line, the other lines obsolete, discal veins shaded. Stigmata paler with darker cores. Hindwings white with grey marginal band and ends to the veins, more widely so in the ♀ than in the ♂. Wing expanse: 26 mm. Panama (Canal Zone).
- griselda*. **C. griselda** Dyar. Forewings faint dark grey with reddish tone. Fasciae formed as in *abseuzalis*, but merely grey and only faintly discernible in the ground. The small subterminal spots are sagittate and somewhat confluent, forming a black and distinct subterminal line. Hindwings brownish black with darker veins. Wing expanse: 24–26 mm. Mexico (Orizaba); Panama (La Chorrera); Venezuela (Aroa).
- mythias*. **C. mythias** Schs. also closely resembles *abseuzalis*. Forewings silvery white with delicate black markings. The antemedian line double below the cell. A black costal streak distally of the postmedian. The black subterminal spots are merely streaks, the spot below vein 2 being larger. Hindwings transparent whitish with black-brown marginal band and ends to veins. Wing expanse: 21 mm. Guatemala (Cayuga).
- arcuata*. **C. arcuata** Schs. (56 e). Body grey-brown, abdomen turning to rusty red posteriorly. Forewings pale brown with faint olive hue and vestiges of an undulate antemedian line. The other lines indistinctly darker. A blackish streak at end of cell. A row of faintly darker small spots subterminally. Hindwings grey with black-brown powdering. The ♀ is slightly paler in colouration, the black subterminal spot on the submedian fold is more prominent. Costa Rica.
- metaphaea*. **C. metaphaea** Hmps. (56 e). In the following species the subterminal row of dots is absent. Forewings white, suffused with coppery brownish and mottled. Both transverse lines indistinctly double, the inner lines being the heavier. The round stigma has first a white, then a black surround and a coppery brown core. Distally there is an "8" shaped stigma. The indistinct dentate subterminal is whitish with a shaded brownish black inner edge. Hindwings uniformly black-brown with coppery gloss in ♂ transparent white in ♀. Veins and margin dusted with brownish black. Costa Rica and Panama.
- chirica*. **C. chirica** Schs. (= *aperta* Drc. part.) (56 e). The white forewings are dusted over with golden brown, only the costal area remains purer white. The 3 fine transverse lines are black and dentate. Stigmata as in *metaphaea*, also having an "8" shaped stigma distally. The dentate dark subterminal is less distinct and has a whitish outer edge. Hindwings transparent white, veins, margin and inner margin black-brownish. Mexico to Costa Rica.
- steniptera*. **C. steniptera** Schs. (56 f) resembles the preceding, but is smaller and with narrower wings, that are pale brown admixed with grey. The fasciae are similar, but the stigmata are much larger with brown surrounds and the surround is extended to a point both on the inner and outer sides. The grey subterminal is edged inwardly by a somewhat dentate brownish black shade. The dark marginal dots have white inner edges. French Guiana.
- araca*. **C. araca** Schs. (56 f). Body and wings grey-white heavily suffused with violaceous brown. Behind the arched antemedian and below the cell there is a whitish spot with black centre. At end of cell a round white spot and distally a red-brown annulet, the outer edge of which denotes a part of a faint postmedian. Subterminal line whitish. Hindwings black-brown, dusted with grey. Costa Rica.
- flotsama*. **C. flotsama** Dyar. Forewings grey tinged with reddish, all markings almost extinct except for the large irregular annulate stigma, the faint reddish outline of which forms a part of the postmedian line, as in the preceding species. The subterminal is a dark grey shade, wide at inner margin and tapering off upwards with faintly paler outer edge. Wing expanse: 20 mm. Panama (Trinidad River).
- insignis*. **C. insignis** Dogn. Forewings grey dusted with white. On forewings only a reniform stigma and a subterminal row of black-brown small streaks are visible. The spot between veins 1 and 2 is displaced from the row and moved somewhat inwards. Margin somewhat more brownish between the veins. In ♀ hindwings blackish, paler towards the base, in ♂ semi-transparent white. In a ♀ from Panama, a dentate postmedian line is indicated. Wing expanse: 24–28 mm. Panama, French Guiana.
- haematopis*. **C. haematopis** Hmps. (56 f). The grey-white forewings are mingled with black-brown, basal area below the cell tinged with carmine-reddish. There are red streaks behind the postmedian and the subterminal. The stigma has a carmine-red centre in a white annulet with a black surround. The subterminal line is indicated by a brownish black inner shading. Hindwings transparent white. Veins, marginal area and inner margin dusted with blackish brown. Hindwings of ♂ darker than those of ♀. San Salvador Argentine (Tucuman).

C. siopera Dyar resembles *haematopsis*, but has a dark grey shaded costal area extending into the cell. *siopera*. The rest of the wings is flesh-coloured reddish grey, the lines dark red, but only faint and finely drawn. The round stigma is pale with red centre. Hindwings pure white in ♂ with wide blackish margin in ♀. Wing expanse: 26 mm. Mexico (Cordoba and Orizaba) to Panama.

C. filifera Wkr. (= *inflexa* Mocr.) (56 f). This is a somewhat larger species. Forewings grey-white, *filifera*. dusted with brown, except for the pure white abdominal area. The delicate transverse lines are black. Stigma round and somewhat paler. The subterminal line only indicated by a darker inner edge. Hindwings transparent white. In ♀ there are fuscous marks on costa indicating the origin of the lines; the ends of the veins on hindwings are blackened and there is a brown marginal line. From Michigan and Florida and also occurring on the Bahamas and Haiti.

C. stroca Schs. (56 f). Body and wings silvery white, the former somewhat admixed with brown. Sparse *stroca*. black pepperings on forewings and delicate black transverse lines, the subbasal and antemedian being double, the round stigma with brown core and a fine black surround. The brownish subterminal is indistinct and diffuse. The white hindwings dusted with pale brownish. Brazil (Castro Paraña).

C. elota Mschlr. (56 f). The white forewings dusted with reddish brown, both anterior transverse lines *elota*. simple, black and with outward convex arch. The dentate postmedian line forms an acute angle on the submedian fold, that almost extends to the antemedian. The round stigma has a red centre. Subterminal line is indicated by a patchy inner brownish shading. Hindwings transparent white. Porto Rico and St. Lucia.

C. leucopsis Schs. (56 g) is similar, forewings pale reddish admixed with blackish brown. The posterior *leucopsis*. transverse line is situated on a pale reddish band and is accompanied by a similar fainter anterior line. Before the diffuse white subterminal line, there is a black dentate shade. Hindwings transparent white, the apical costal part and the ends of the veins are blackish. Costa Rica.

C. interstitia Dyar closely resembles *leucopsis*, but is more heavily dusted with dark red and has a larger *interstitia*. round stigma. Median line faintly dentate inwards. The subterminal is formed of separated black spots, i. e. no continuous band of spots; anteriorly, not posteriorly, the ground is pure white. Margin of hindwings more widely brownish black. Wing expanse: 26 mm. Panama (Cabima).

9. Genus: **Iscadia** Wkr.

Proboscis stunted. Palpi very long, the terminal segment somewhat thickened at the tip. Thorax scaly with an open tuft posteriorly. Abdomen with a small basal tuft. Anterior tibiae with long hairs. Forewings elongate and narrow with almost parallel margins and a rectangular apex. Appendicular cell short and wide. Neuration normal.

Type: *I. aperta* Wkr.

I. nigra Schs. (56 g). One of the smallest species. Forewings black-brown, suffused with leaden grey *nigra*. and with black transverse lines, the anterior one being double. Both the upper stigmata with blackish surrounds, the round one with reddish centre, the reniform elliptical with an appression of black scales in centre. Between the two a dentate median line is indicated. Postmedian simple. The undulate grey subterminal has an inner blackish shade. Hindwings transparent white, veins and margin somewhat brownish. Argentine.

I. aperta Wkr. (= *schildei* Mschlr.) (56 g). Forewings grey admixed with brown; base and spots on *aperta*. costa and inner margin paler. Transverse lines black, the anterior one being double, the posterior one only double at costa. The latter circumscribes the top of the reniform stigma in a large loop. The stigmata with whitish surrounds and an appression of brown scales in centres. The whitish subterminal line is dentate. Hindwings transparent white, somewhat brownish on veins and at margin. — **apertella** Strd. (= ab. 1 *Hmps.*). The *apertella*. median area is suffused with black below the costa and in the upper half of cell. From Mexico to Brazil and in S. E. Peru, where it is widely distributed and common.

I. dukinfieldia Schs. (56 g) is similar to the preceding, but smaller. The whitish forewings are mingled *dukinfieldia*. with black-brown, median area from costa to discal fold brown, transverse lines as in *aperta*. Orbicular stigma merely indicated by a small appression of black scales. Reniform is a blackish crescent. The double subterminal is interfilled with whitish. Hindwings white, veins and margin brownish. Wing expanse: 40 mm. Brazil (Castro).

I. variegata Drc. (56 g). A very characteristic species with red-brown costal and white inner areas. It *variegata*. is easily recognisable and we refer to the illustration. It is a very common species and occurs from Mexico to Peru and is also found on Trinidad.

I. producta Dogn. (56 h). Forewings grey in basal area, otherwise dark red-brown, partially admixed *producta*. with greyish. Antemedian indistinctly double. In the cell distally of it 2 appressions of black scales in paler annulets. The dark brown transverse line is reddish on top and somewhat edged by whitish at inner margin. The whitish subterminal has a brown inner edge. Hindwings are pale reddish brown, paler and whitish in basal area in ♂. Costa Rica to Colombia, also occurring on Trinidad.

- buckleyi*. **I. buckleyi** Drc. (56 h). A large dark species. Forewings ochreous brownish, admixed with red-brown and violaceous grey and peppered with black. Costal area black-brown and grey in centre. Transverse lines black, the postmedian double. Appressions of black scales in centre and at end of cell in the place of stigmata. The indistinct paler subterminal is accompanied on its inner side by black sagittate marks. Hindwings red-brown. Ecuador.
- daemonassa*. **I. daemonassa** Dyar. (56 h). This probably should not be classified in this Genus. Forewings brownish black, densely dusted with black, with a grey apical spot and paler brownish inner margin. The delicate dentate black transverse lines are conjoined on submedian fold by a black bar. Very fine black streaks in the interstices between the veins extend into the dentate margin. Abdomen and hindwings white, the latter transparent with narrowly blackened veins in the apical half. Mexico (Zacualpan).
- leena*. **I. leena** Drc. (56 h). Also this species does not appear to belong here. Forewings pale reddish grey with fine black striations, shaded in the antemedian costal half and with a narrow grey-black subapical costal spot. Basal area outwardly greenish, silvery white, outlined by an arched double subbasal line, the inner part of which is fainter and brown. A boldly dentate and very fine postmedian is faintly visible. Stigmata indicated by appressions of scales in and below the cell. Hindwings brownish, paler at base. Panama, Venezuela.
- diopis*. **I. diopis** Hmps. (= *aperta* Drc. part.) (56 h). Forewings grey, mottled with black and brown. Basal area red-brown with a fuscous band distally. The latter is edged inwardly by the antemedian. Stigmata with a somewhat reddish tinge and with a small appression of black scales in the centre. Postmedian transverse line double with patches of red-brown dusting posteriorly. Black sagittate spots inwards of the grey subterminal. Hindwings brown. Costa Rica and Trinidad.
- phaeoptera*. **I. phaeoptera** Dogn. (56 i). Body and wings dark reddish brown. Both transverse lines indistinctly double, a dark dusted band distally of the antemedian. In the cell, in place of stigmata, appressions of black scales situate in paler ringlets. The subterminal consists of black cuneiform marks. Hindwings deeper black-brown. French Guiana and the Amazon (Pebas).

10. Genus: **Elaeognatha** Hmps.

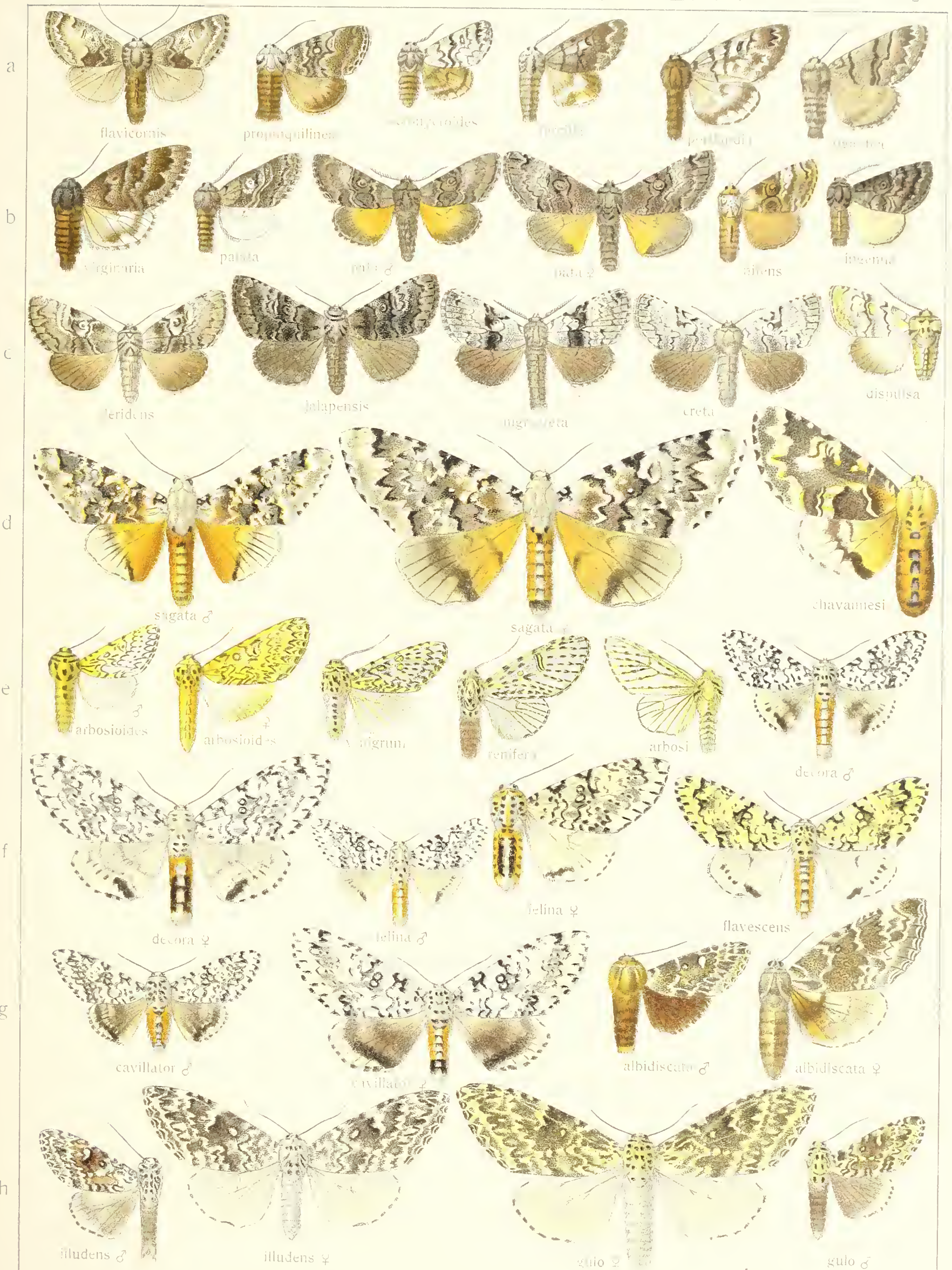
Differing from the preceding Genus by the complete absence of a proboscis, the thorax, which also has an anterior tuft and short subdorsal tufts on abdomen. Wing contour is still longer and narrower. In many species both pairs of wings have androconia pads. On hindwings vein 3 and 5 stalked, 4 is missing, 6 and 7 also stalked.

Type: *E. argyritis* Hmps.

- phaeostrola*. **E. phaeostrola** Hmps. (56 i). Like the following species, this has on the underside of forewings, below the centre of cell, a large androconia patch, on upper side of hindwings on costa a vestiture of a long hairy fringe and in, behind and below the cell, an extensive hyaline membrane; apex is protracted to a point. Forewings silvery white, peppered with black and with the exception of marginal area, dusted with dark brown. In antemedian area a row of indistinct small black spots. A black dot both in centre and at end of cell. Postmedian line with silvery white inner edge, extends below the median nervure back to the centre, makes a big curve between 2 and 1, forming contact with vein 1 before the centre of the wing and thence proceeding again obliquely outwards to inner margin. The subterminal is black-brown with silvery white inner edge. Hindwings dark reddish brown. Wing expanse: 36 mm. Costa Rica, Panama.
- argyroleuca*. **E. argyroleuca** Hmps. (56 i). Easily recognisable by the wide longitudinal band, extending from base, through the cell to postmedian. Otherwise the forewing is violaceous grey, dusted especially below the cell by brown and black, the marginal area peppered with white. The submedian area admixed with brilliant green. In centre of cell a small black spot. Postmedian and subterminal black, the latter with a white edge. Hindwings brownish. French Guiana.
- troctopera*. **E. troctopera** Schs. In this species the forewing of ♂ has on the underside a fringe of hairs on the subcostalis and a dense androconia pad in the cell. On upperside of hindwings there is a hairy fringe at costal base, the margin is deeply excised between veins 6 and 3. Forewings chocolate-brown, suffused with metallic silvery white, with the exception of a large spot in centre of costa and smaller spots behind the postmedian and subterminal and above the anal angle. Antemedian line white, indistinct; postmedian blackish with white edge on both sides. In centre of cell a white spot and in place of a reniform stigma, a white lunule with brown core. Subterminal line white. Hindwings brown with white costal area. Wing expanse: 40 mm. Costa Rica.
- phanerostola*. **E. phanerostola** Hmps. (56 i). Forewing of ♂ with a fringe of hairs on subcostal to beyond the centre. Hindwings on upperside with long hairs at base of costa. The remainder of wings clothed with rough scales and on the submedian fold with a brush of upturned curved hairs. The margin below the apex is flat and deeply excised in submedian area. Forewings silvery white, suffused with red-brown; a colouration of deeper red-brown with golden gloss occurs in a spot under the base of cell, in a larger antemedian spot, that is conjoined







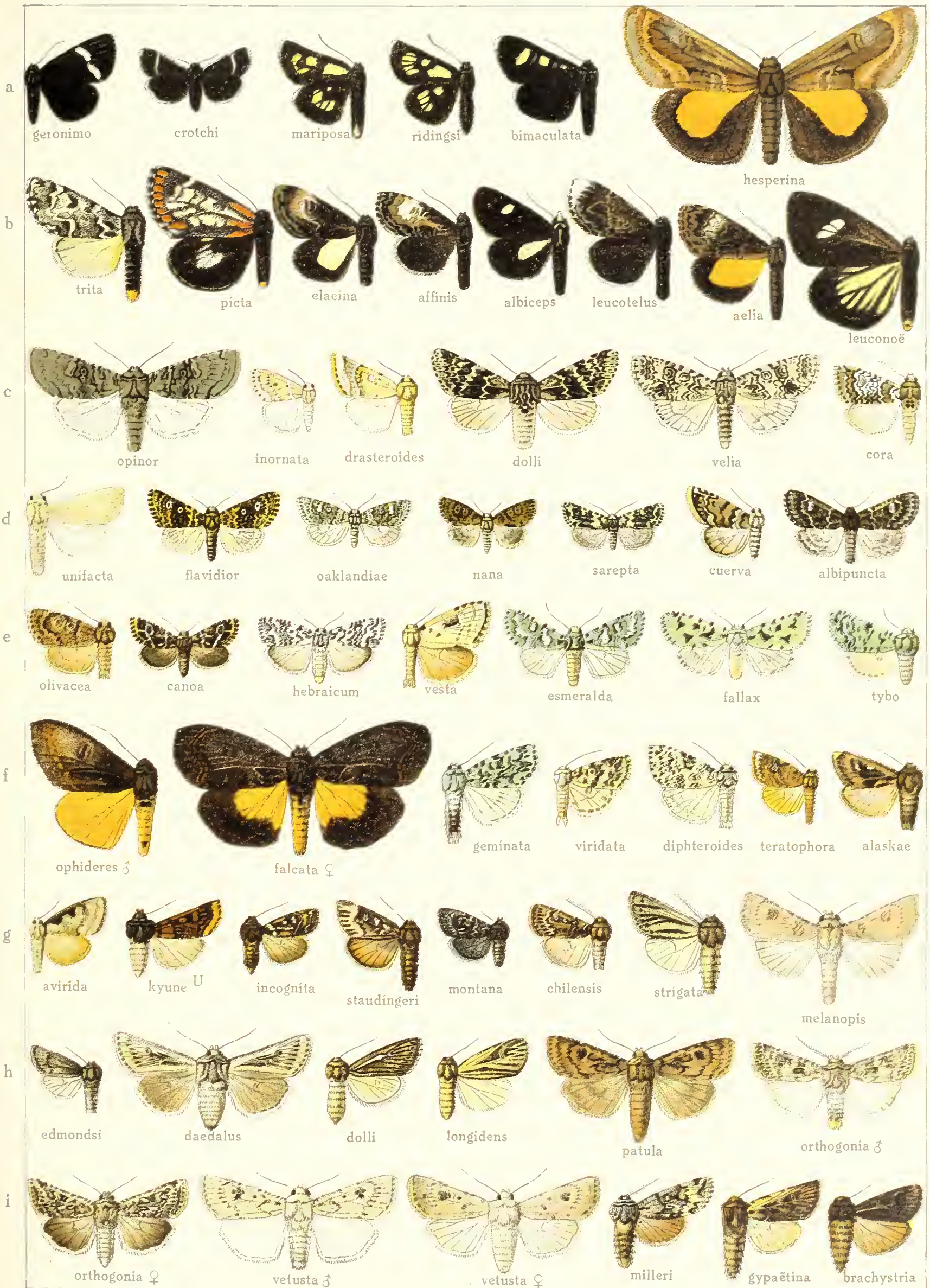








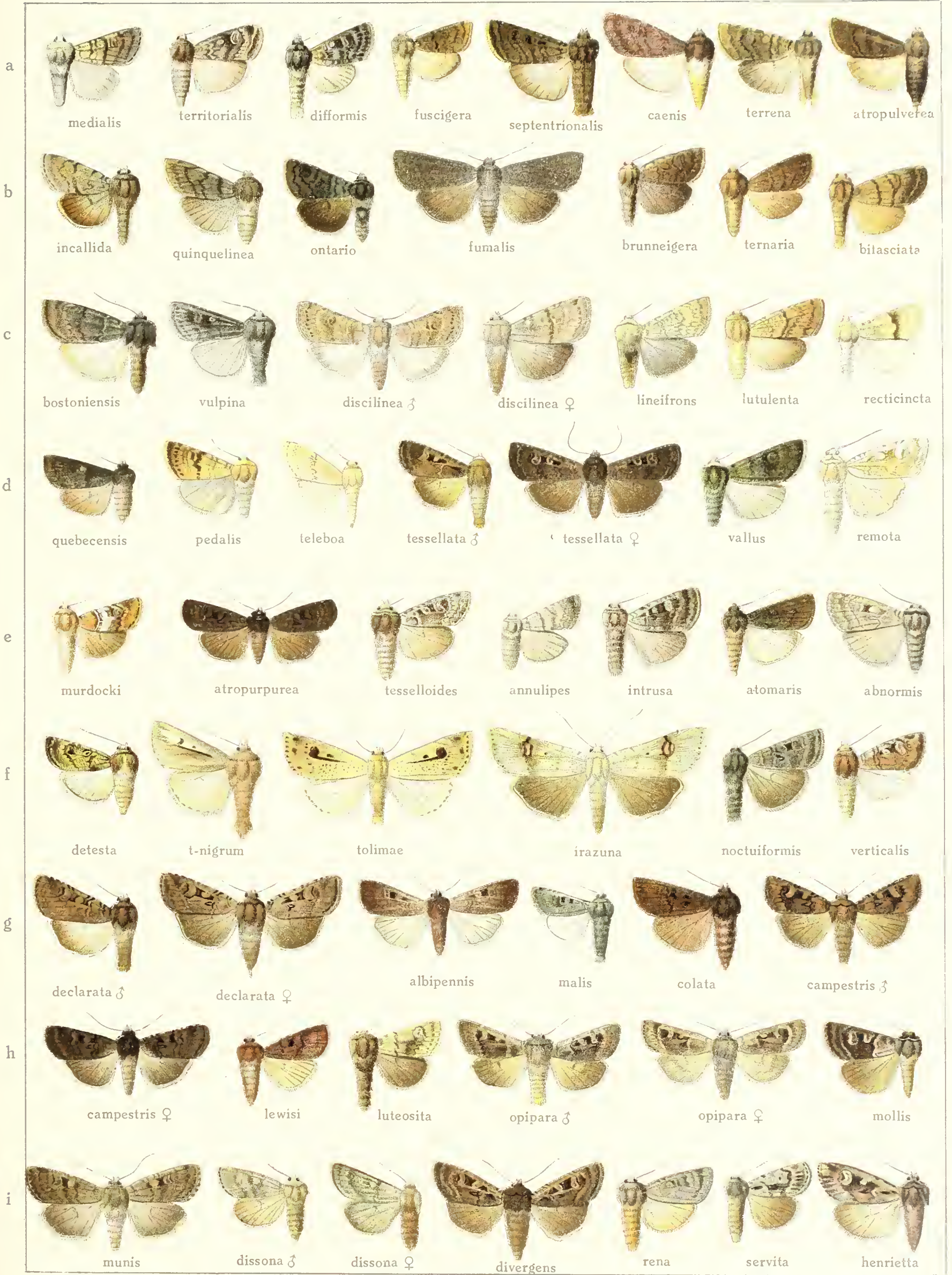




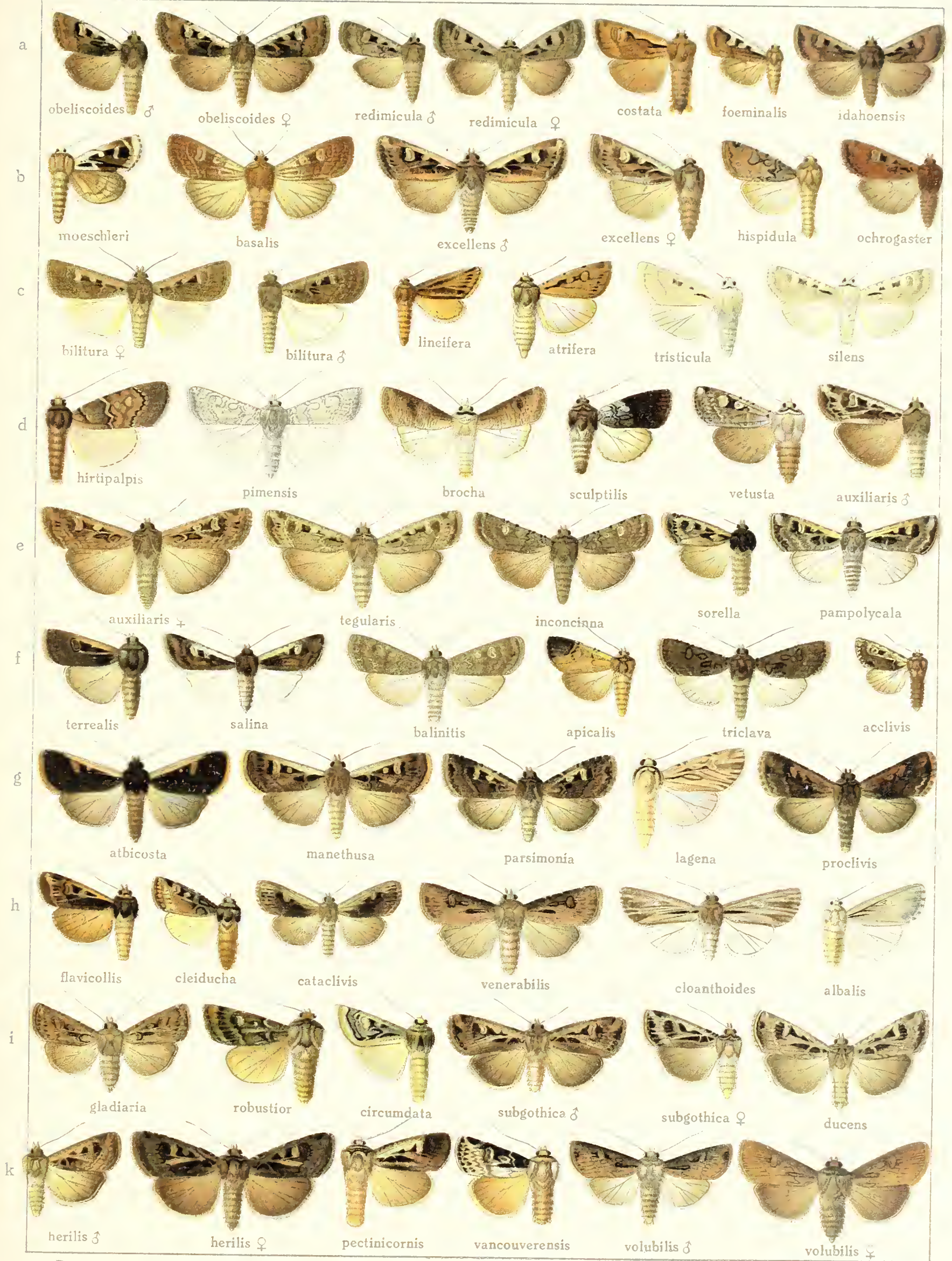




































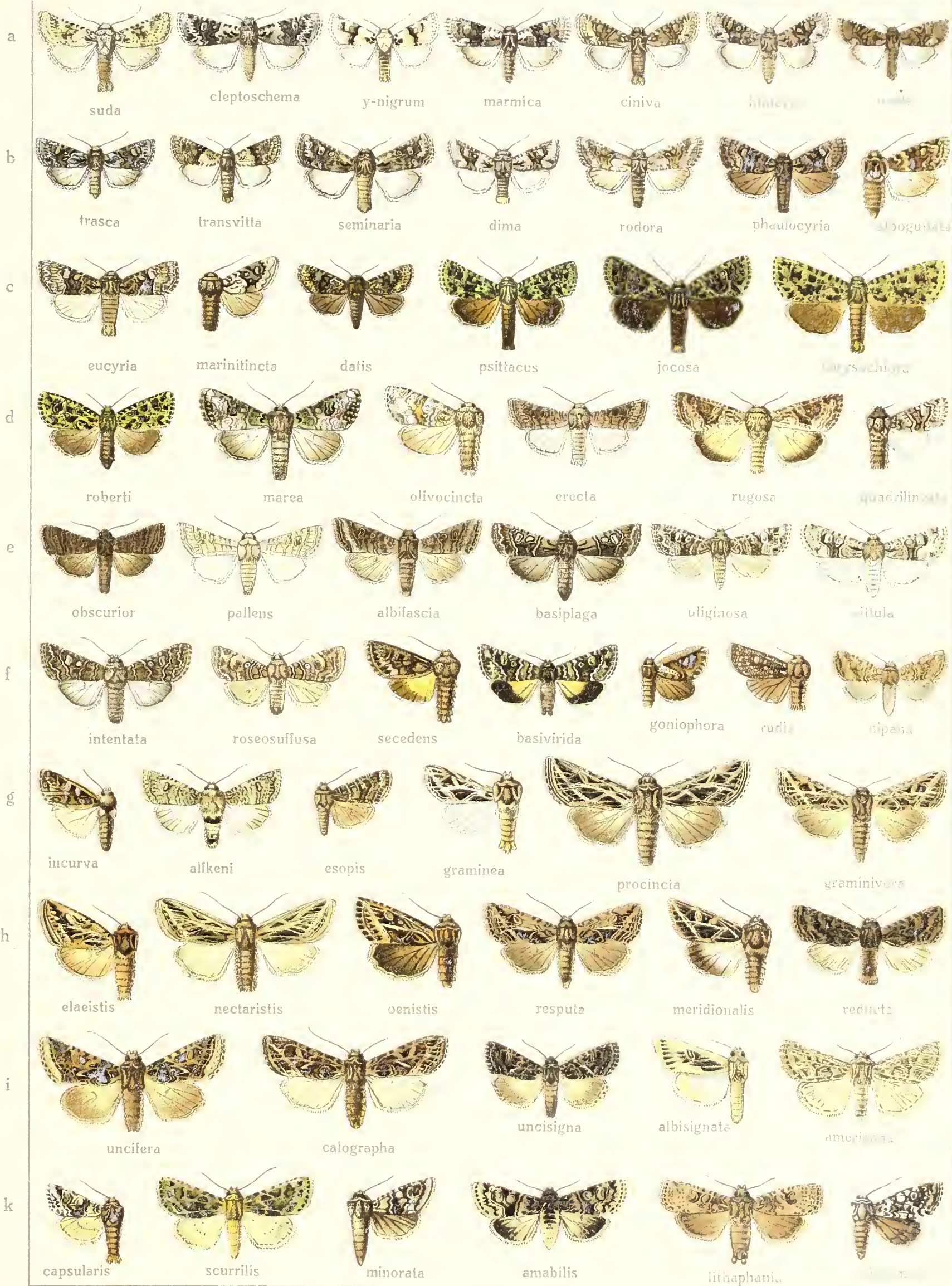




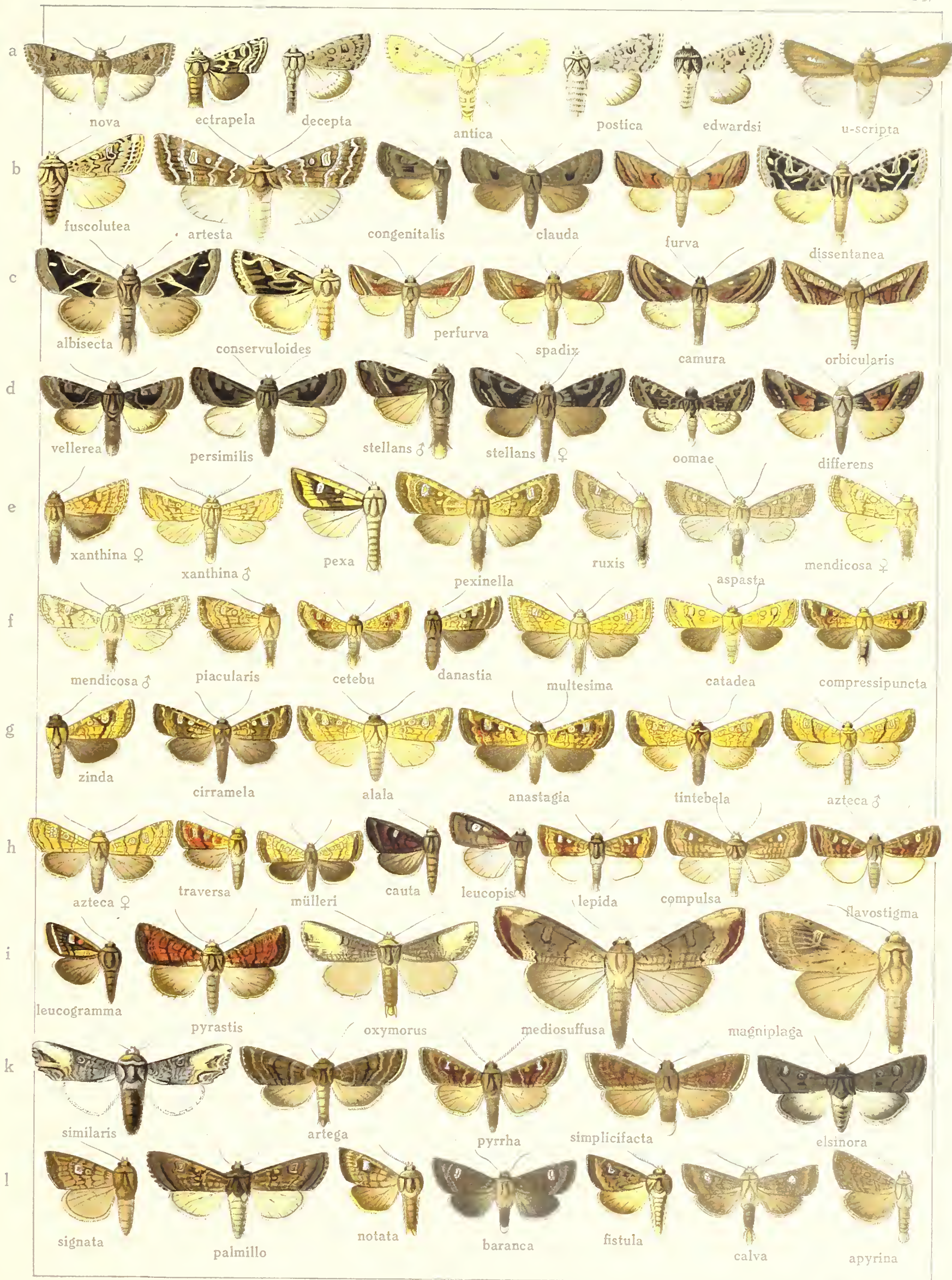




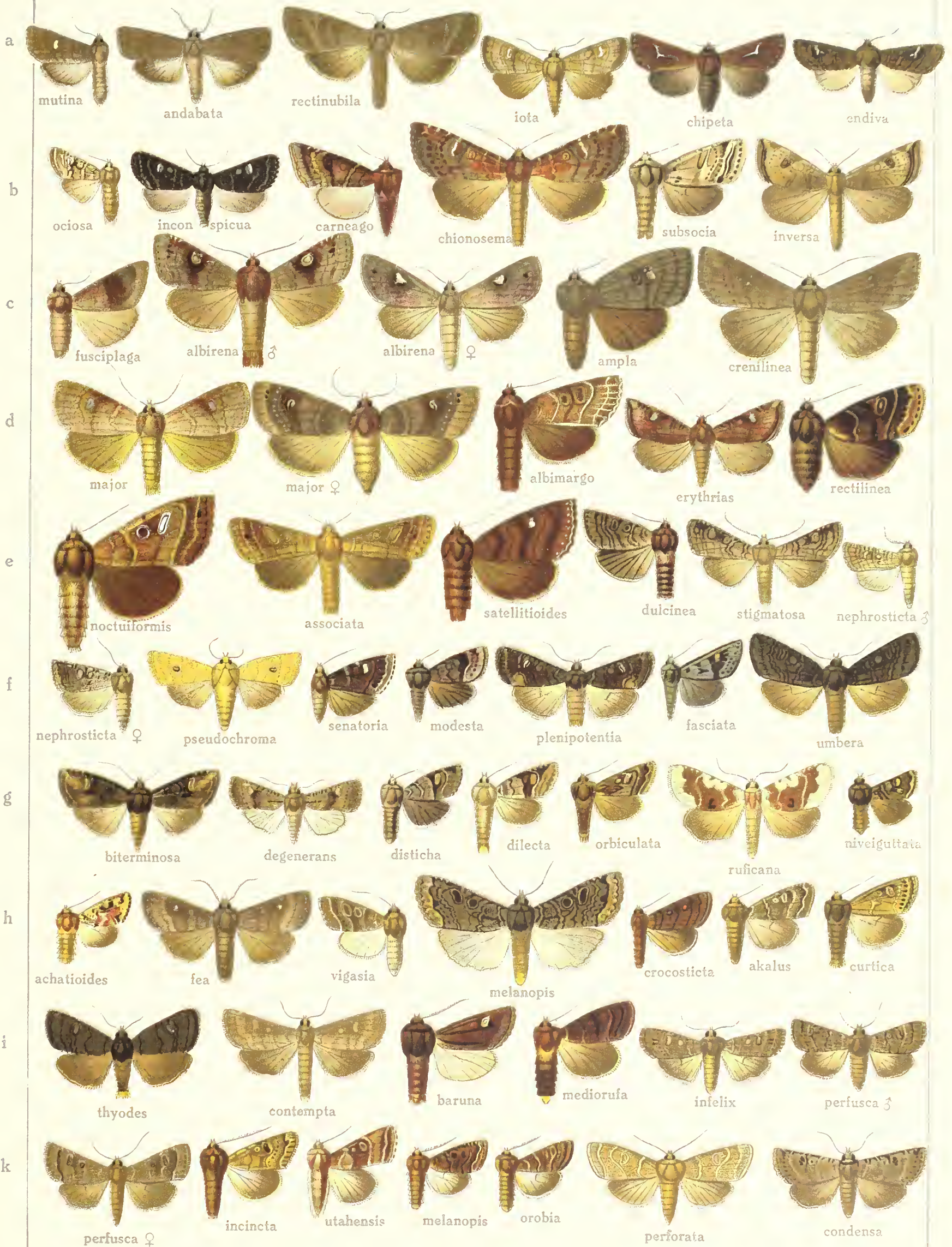








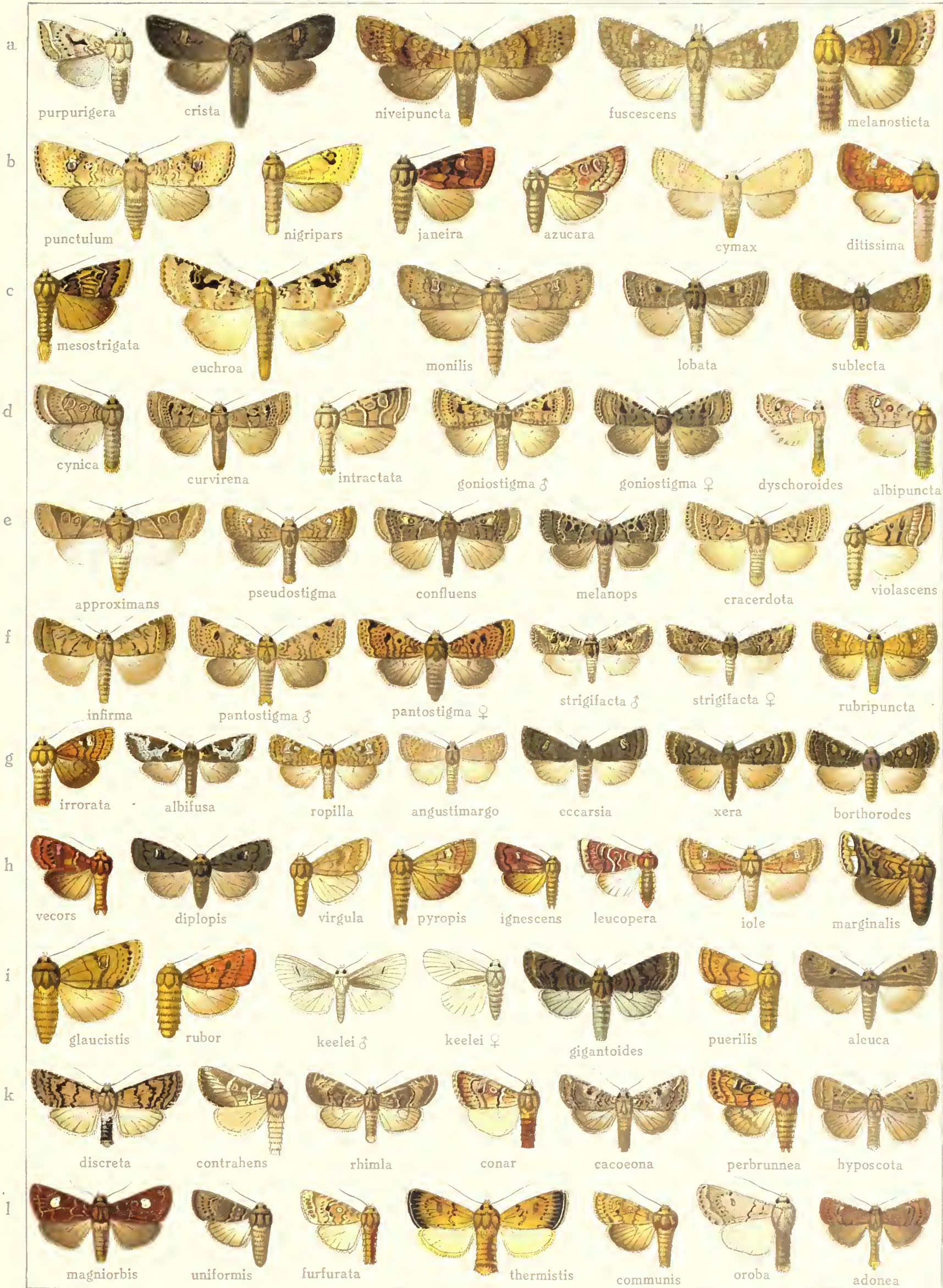
















































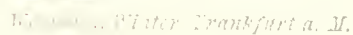














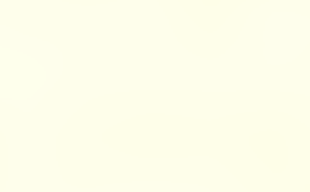






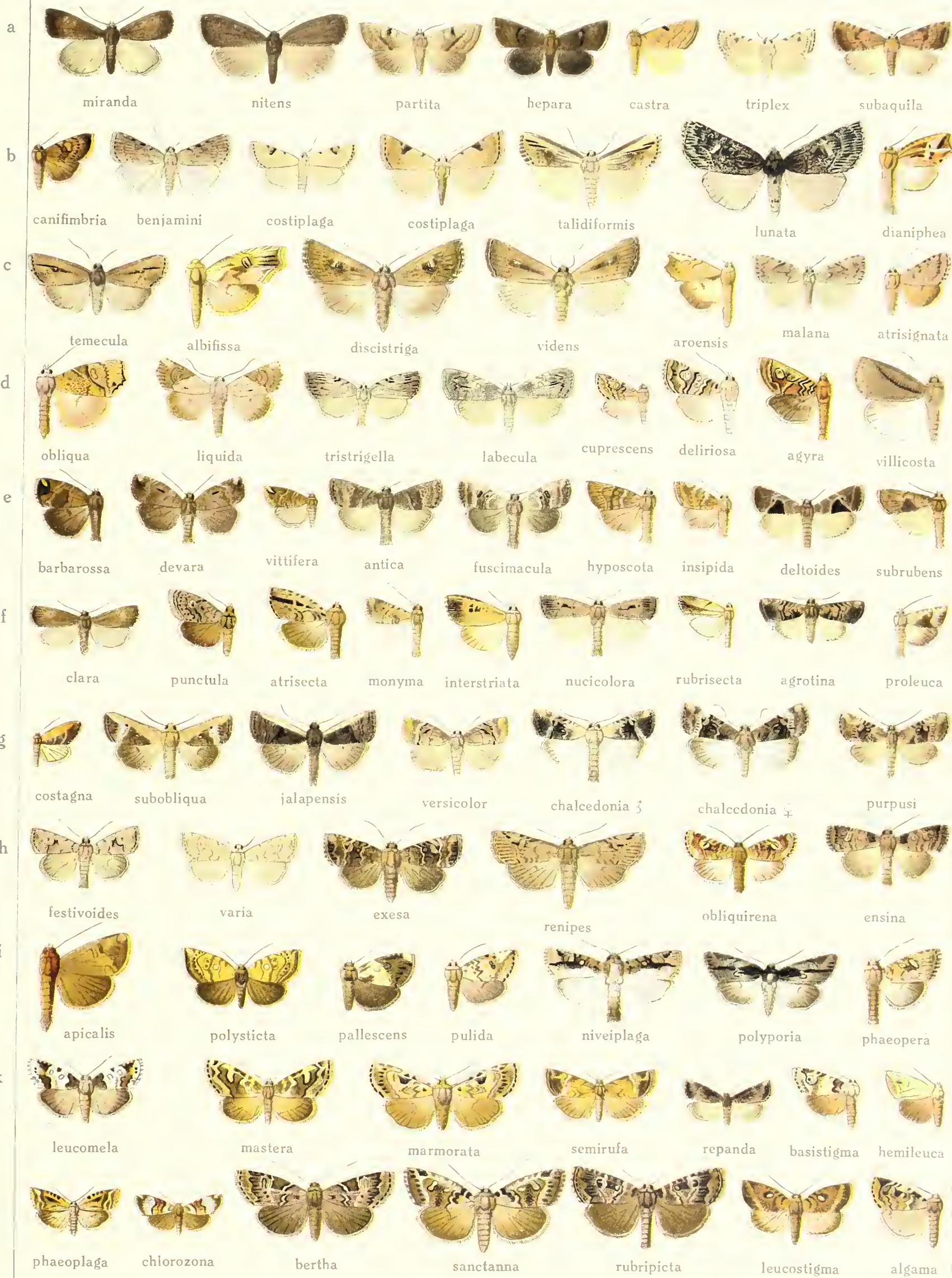




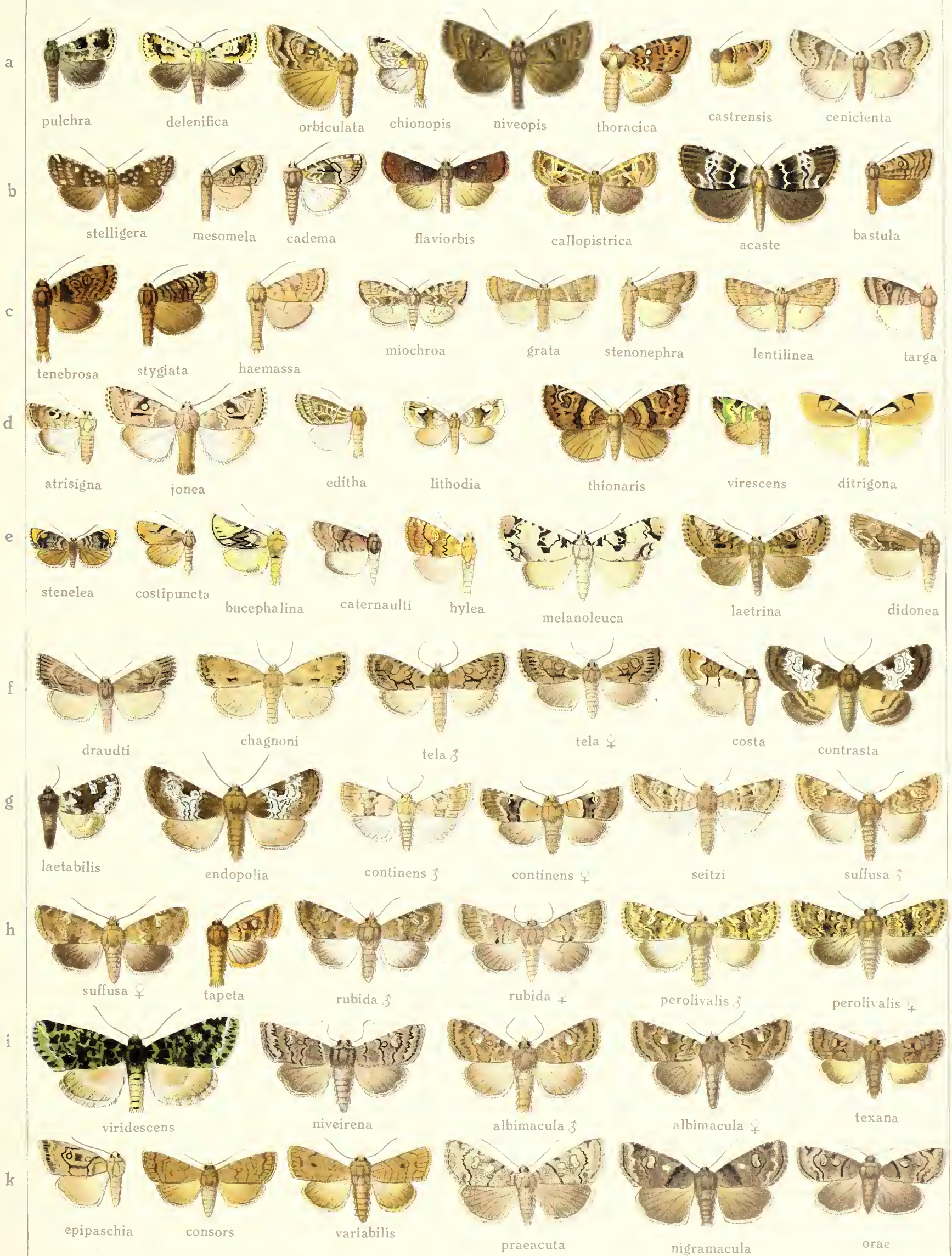












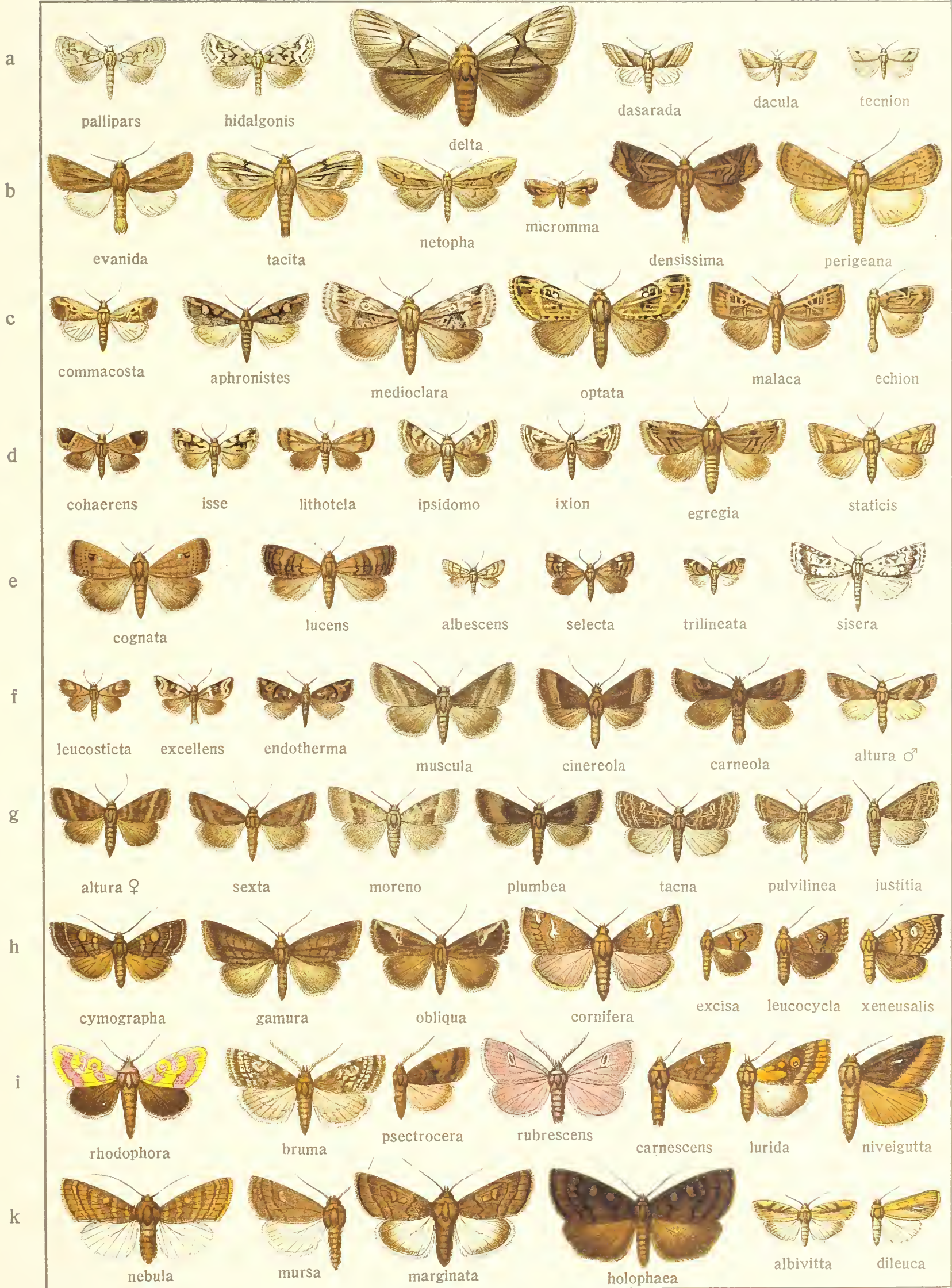




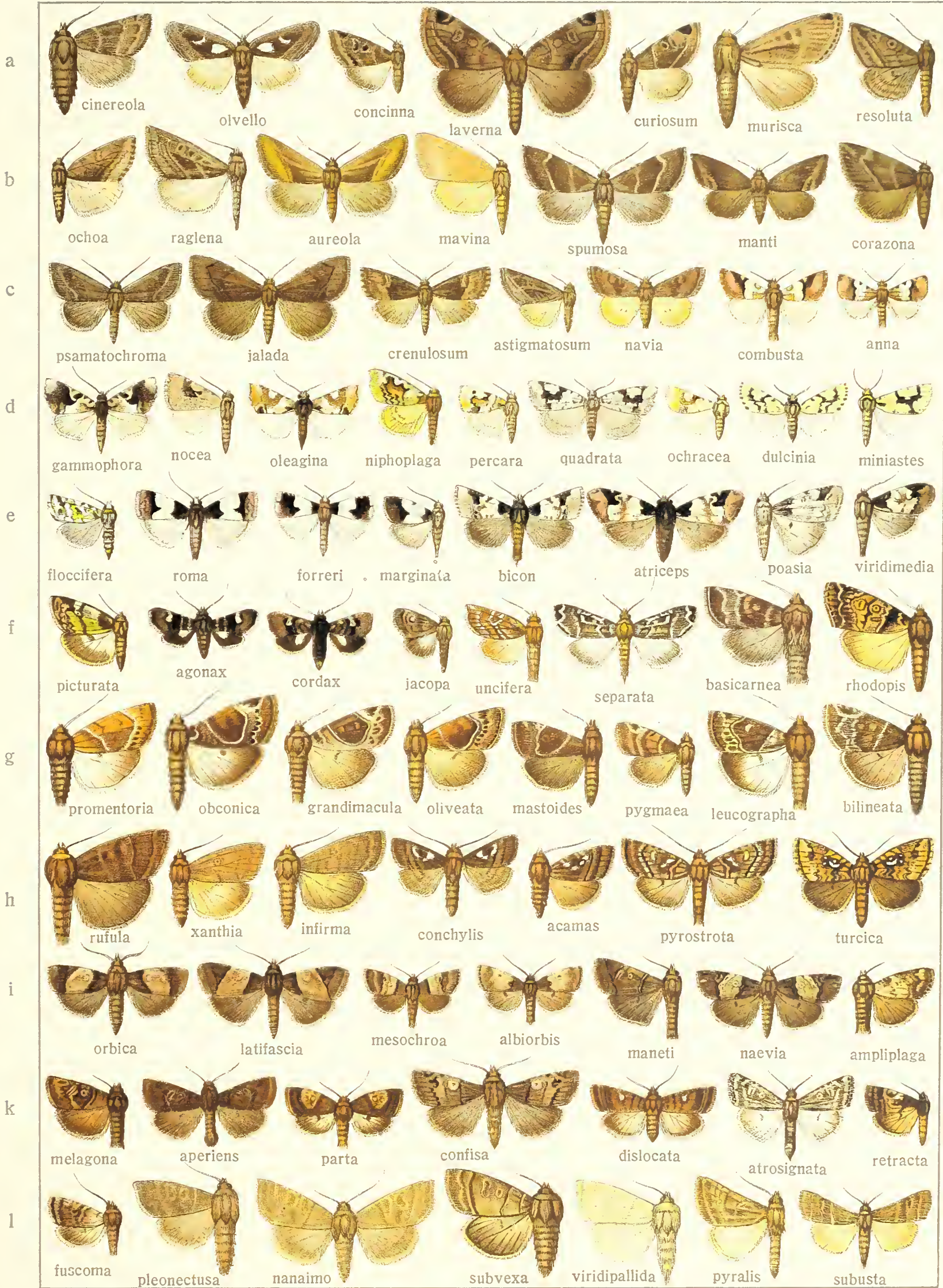




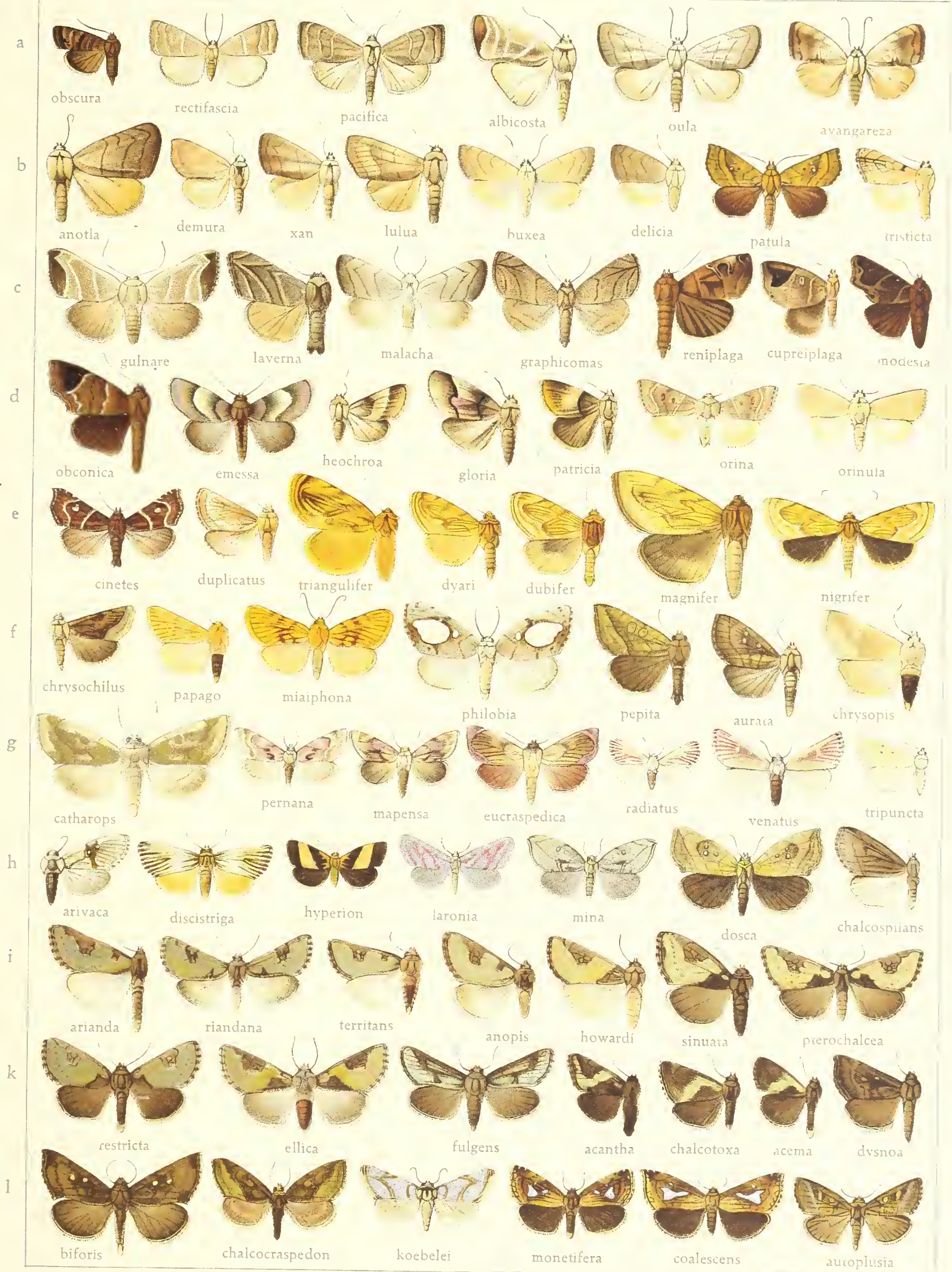




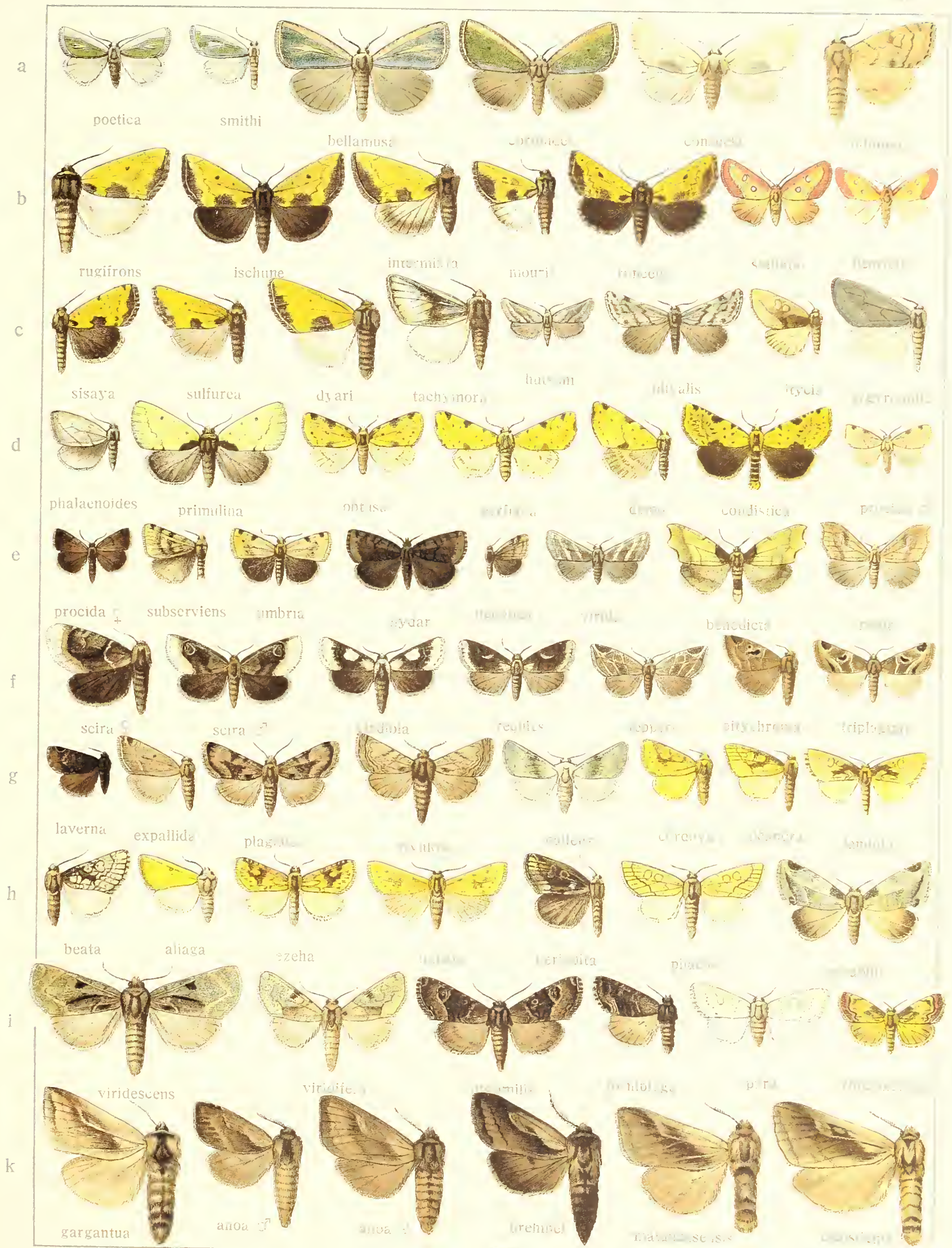




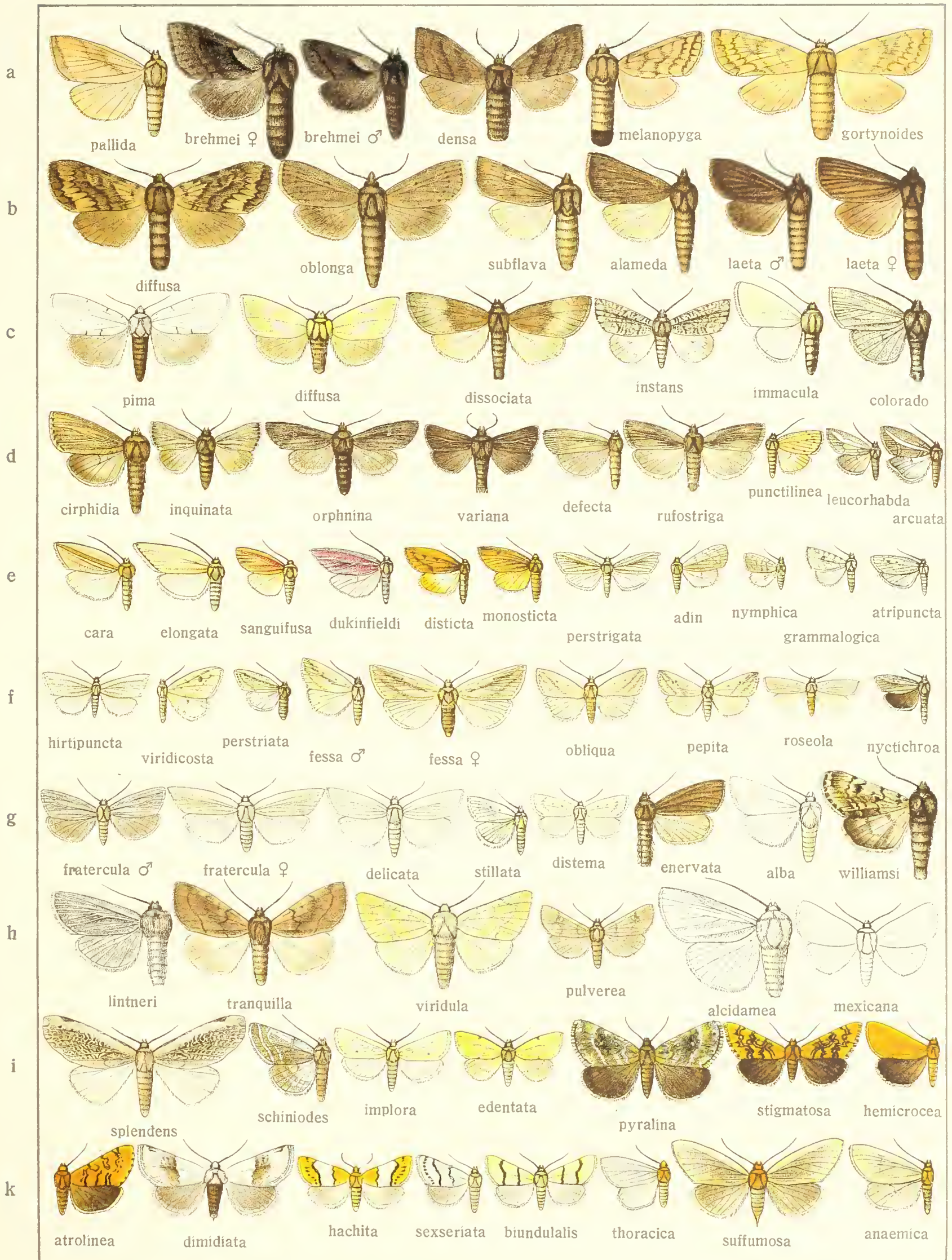




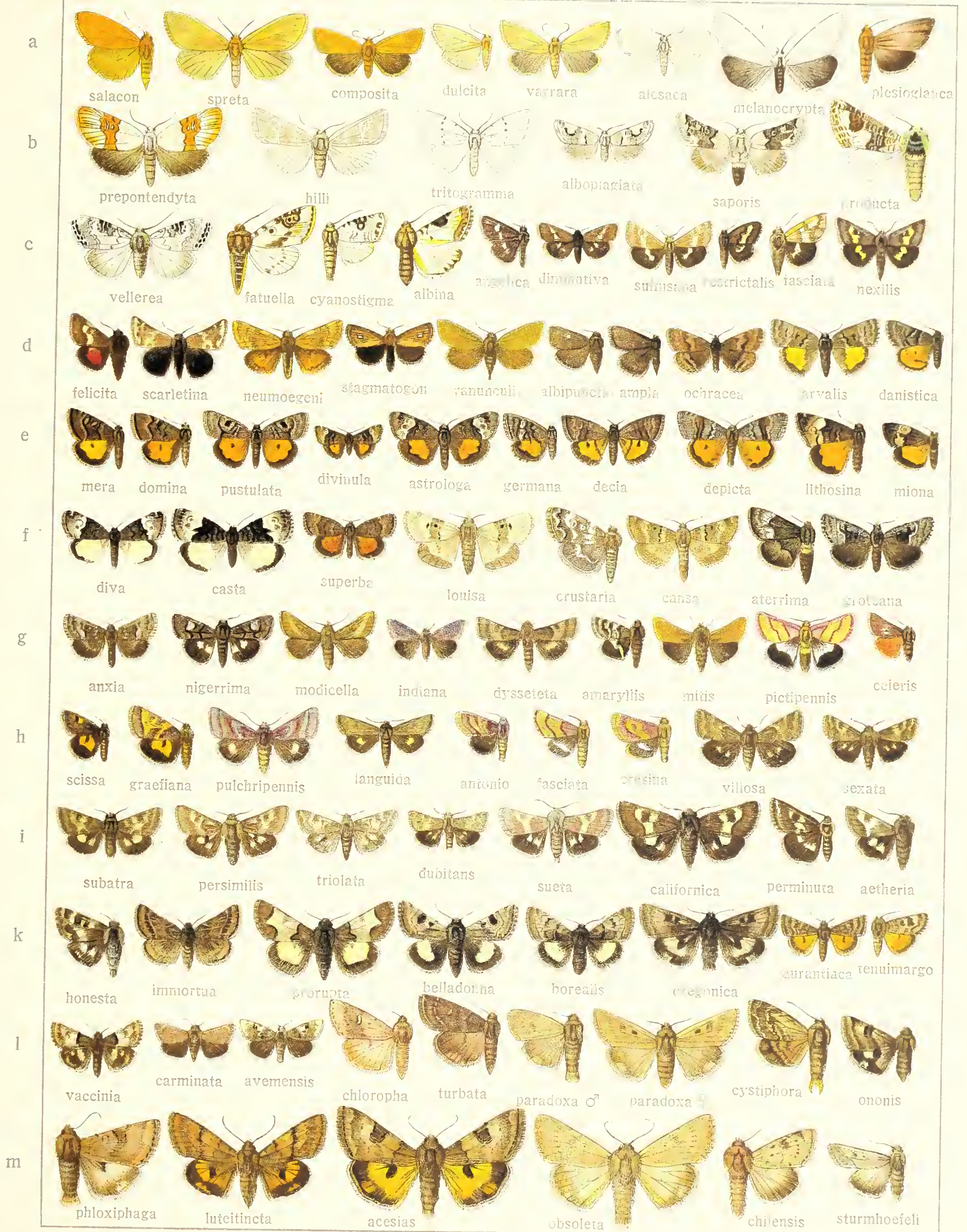




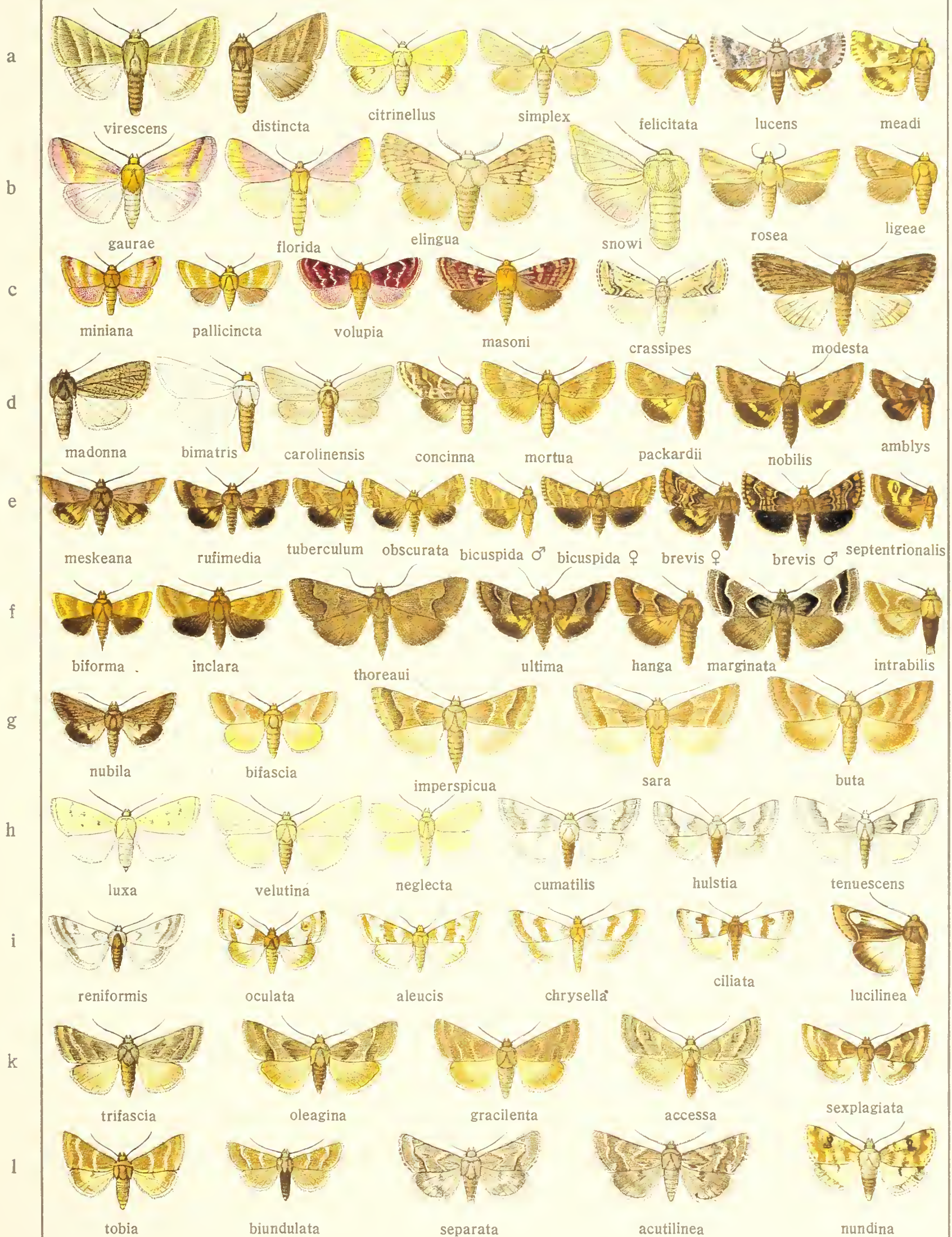




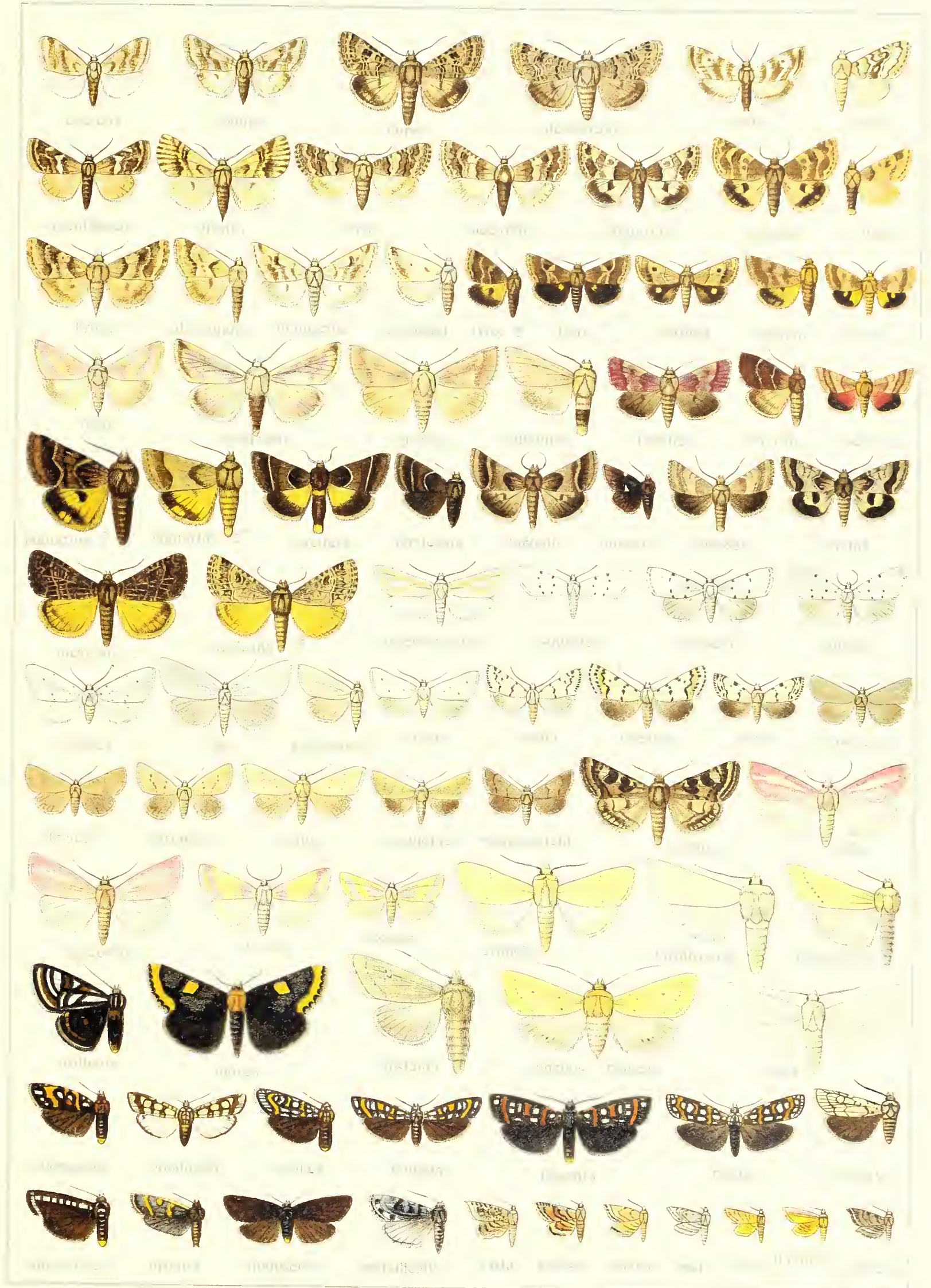




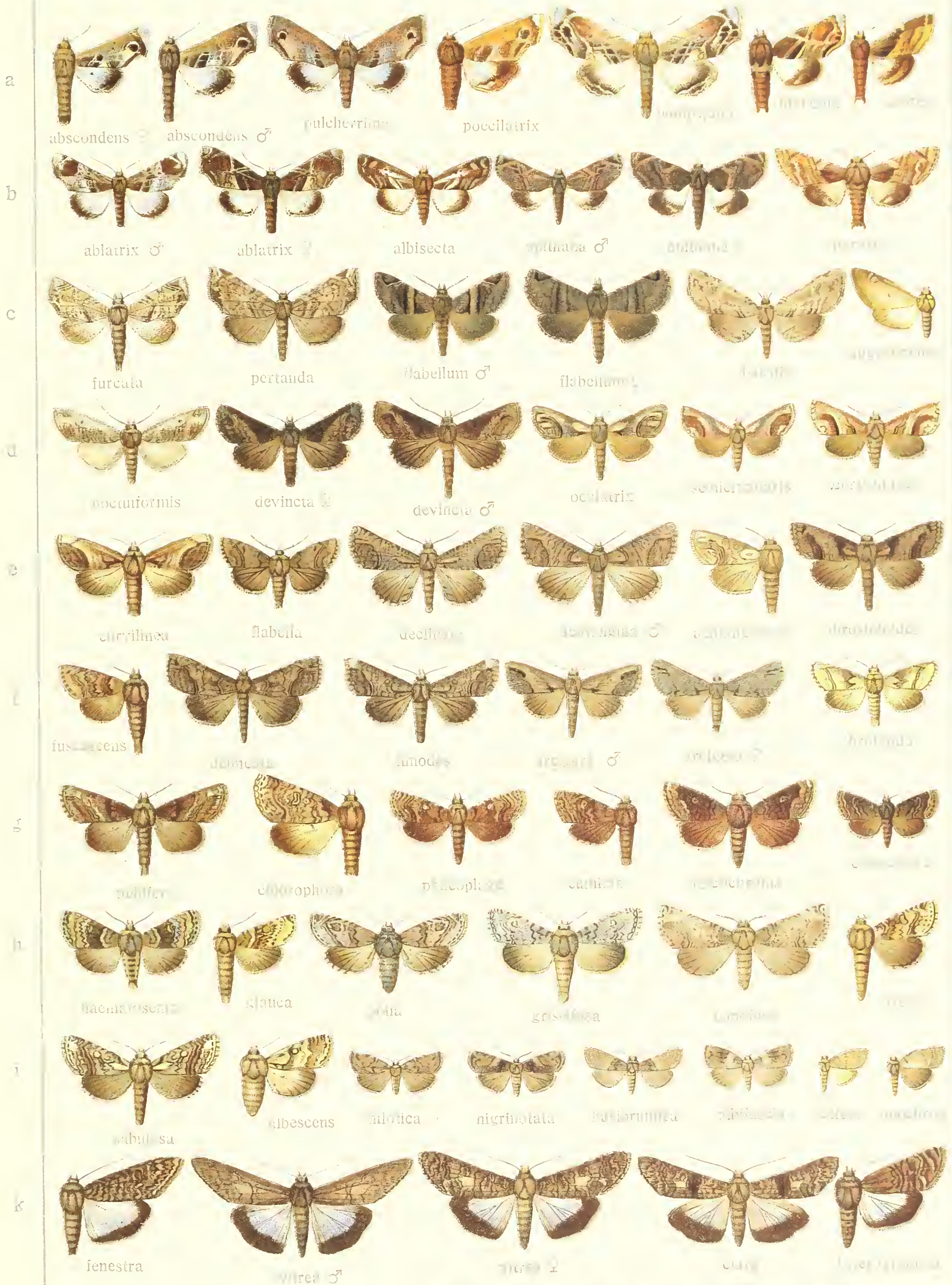








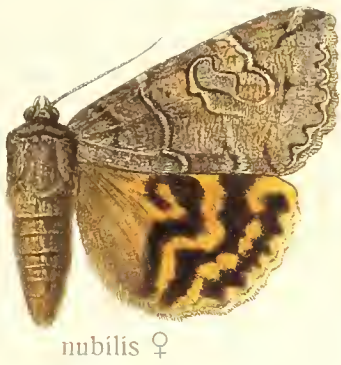




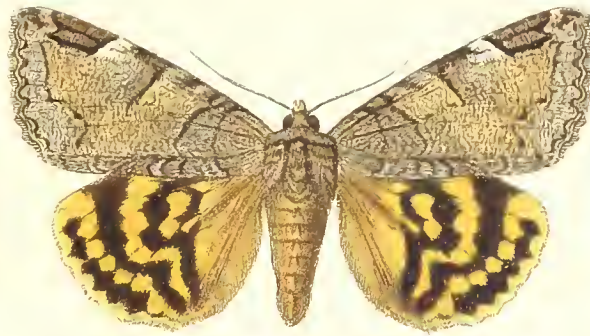




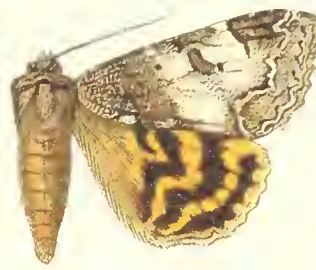
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nubilis ♀



nubilis ♂

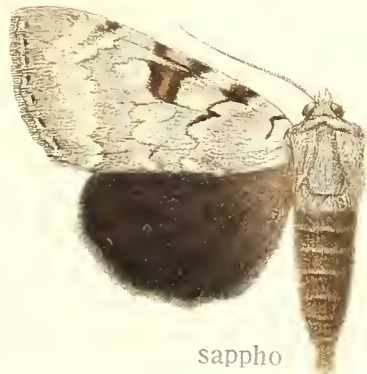


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d



obscura



agrippina



subviridis



lacrymosa

e



zelica



evelina



paulina



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dejecta



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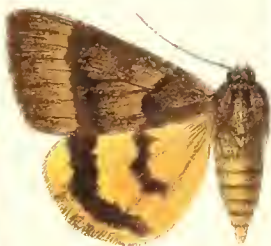


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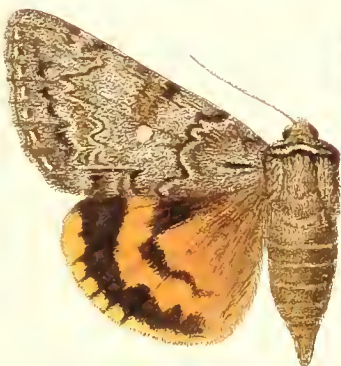


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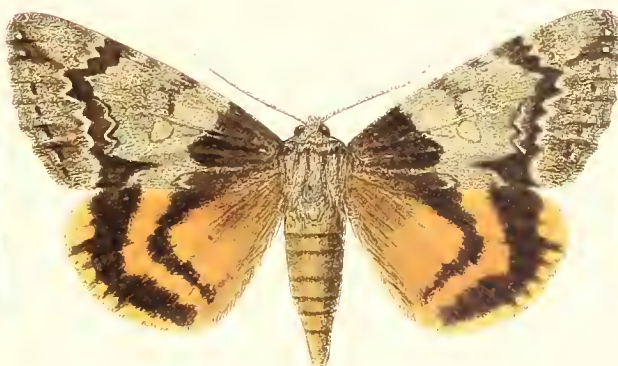


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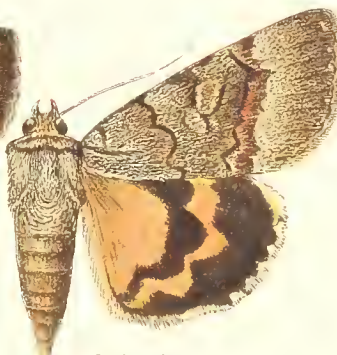
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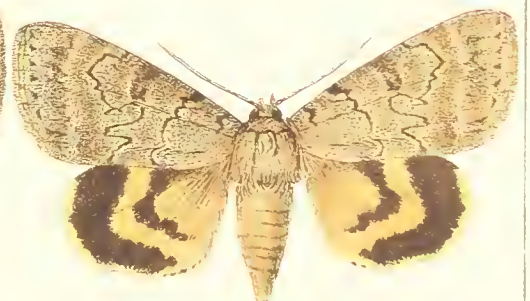
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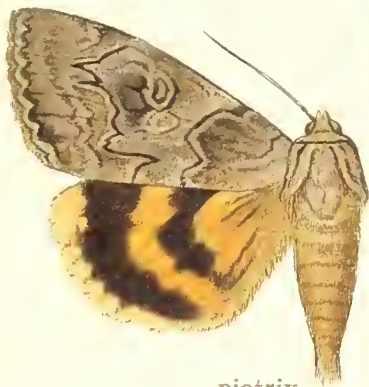
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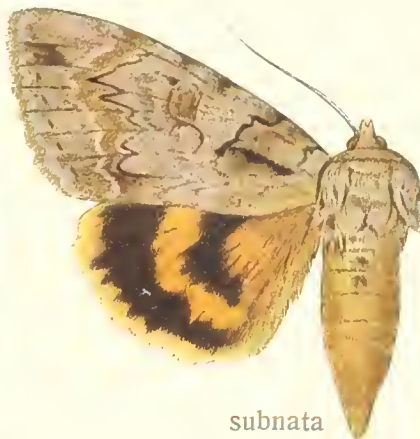
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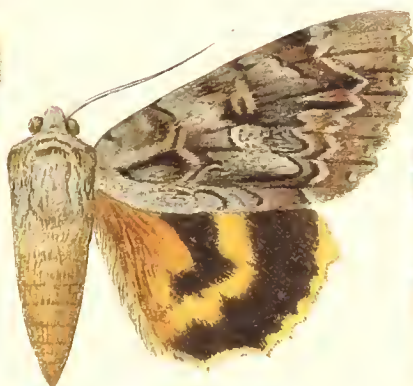


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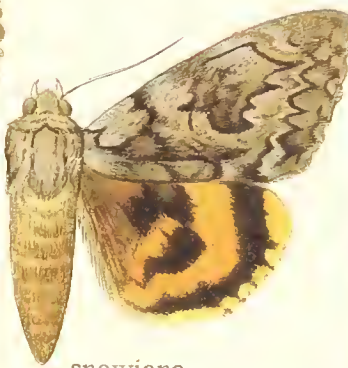
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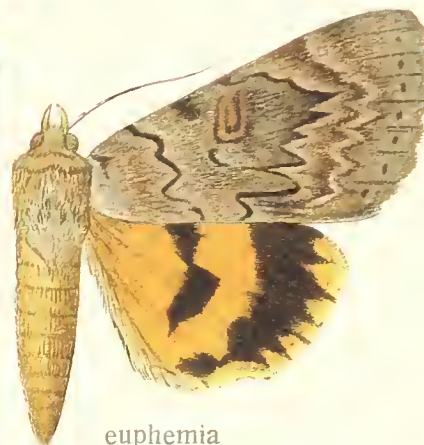
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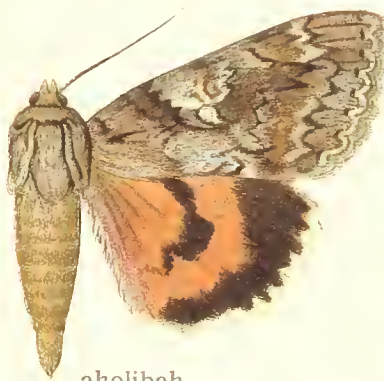
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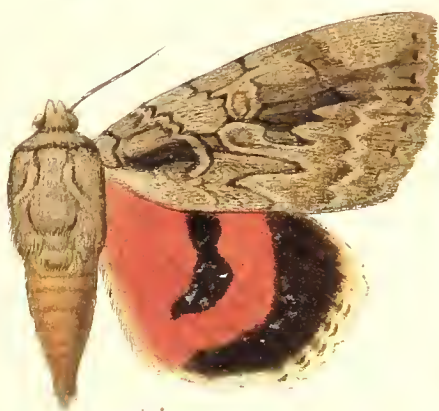


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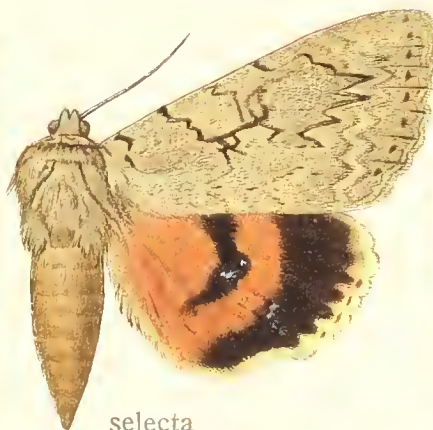


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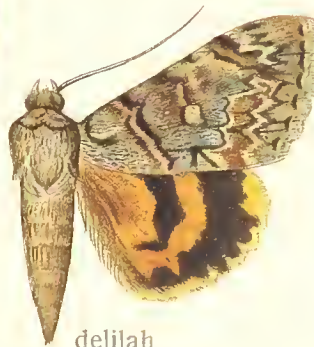
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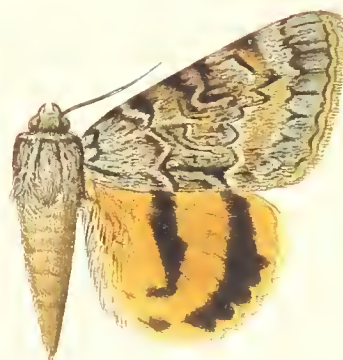
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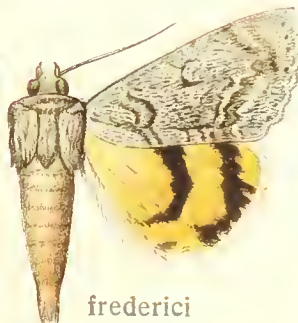


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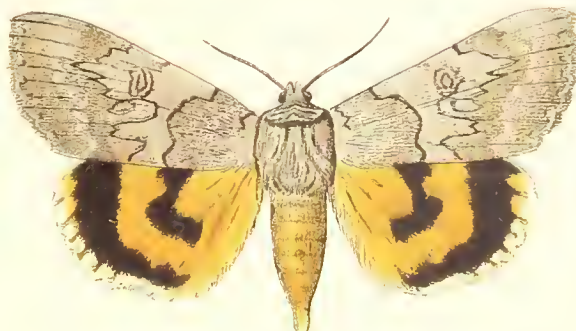
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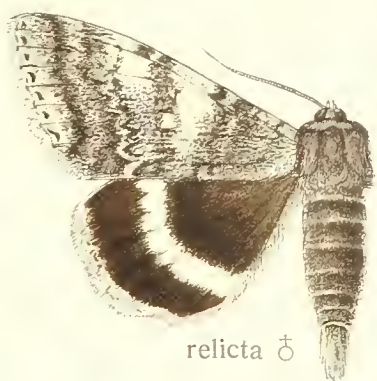
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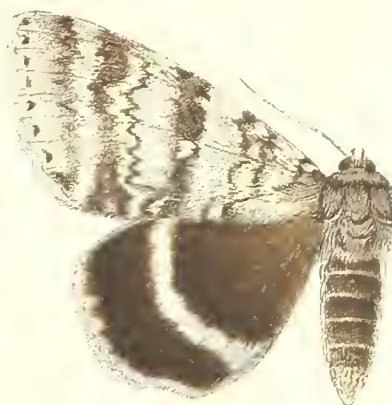
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elda



relictæ ♂

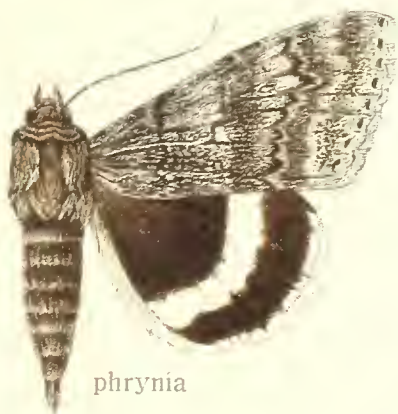


relictæ ♀



clara

b



phrynia

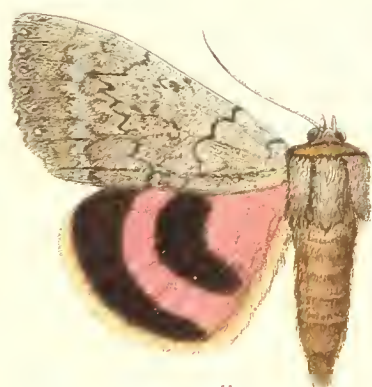


cara



carissima

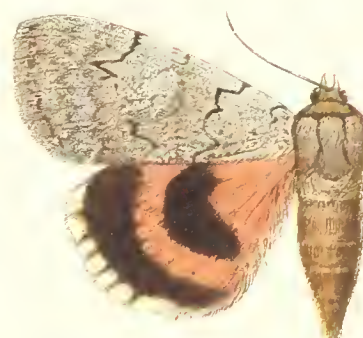
c



diana



marmorata

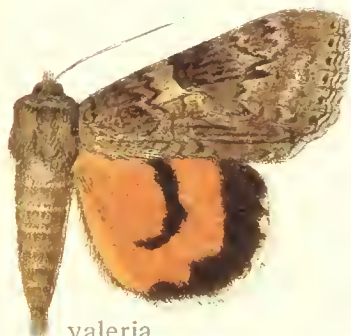


concumbeus

d



irene



valeria

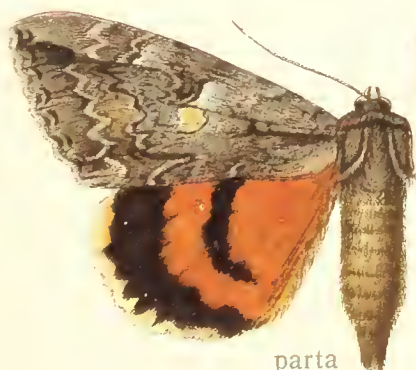


virgilia



volumnia

e



parta



californica



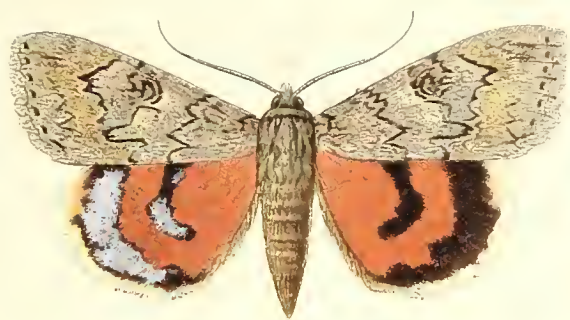
cleopatra



perdita



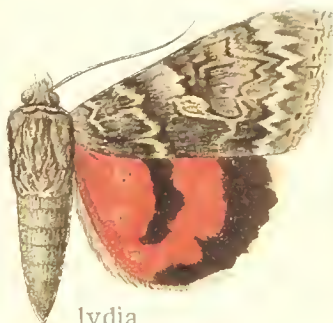
a



faustina



zillah

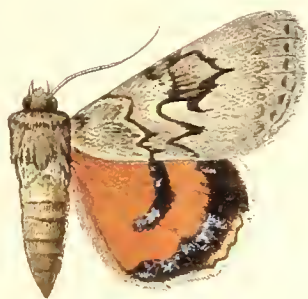


lydia



caerulea

b



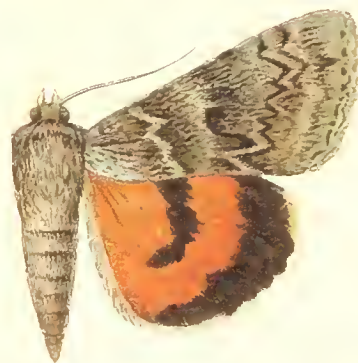
carlota



luciana



luciana var.

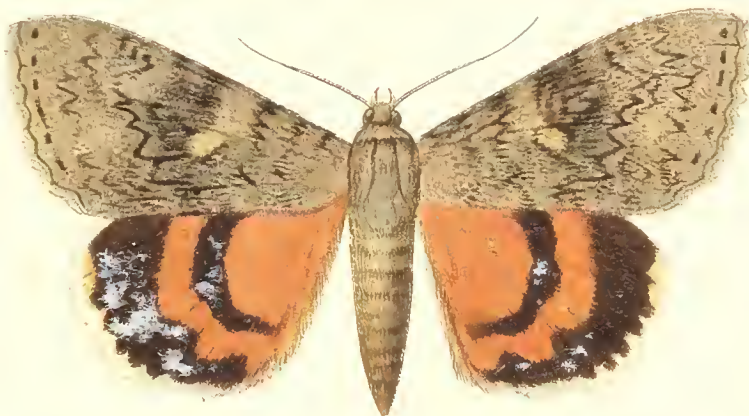


somnia

c



edwardsi

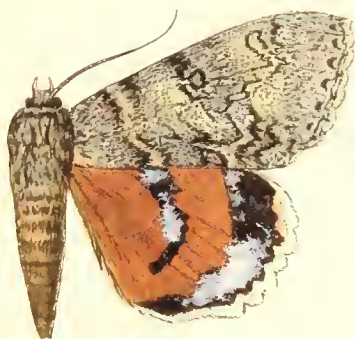


electilis

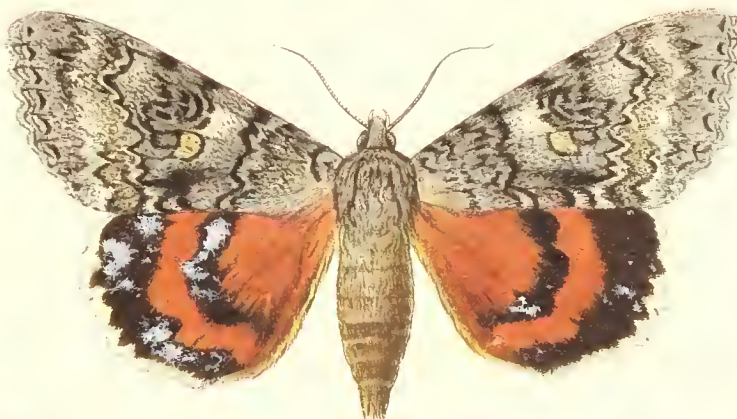


allusa

d



pura

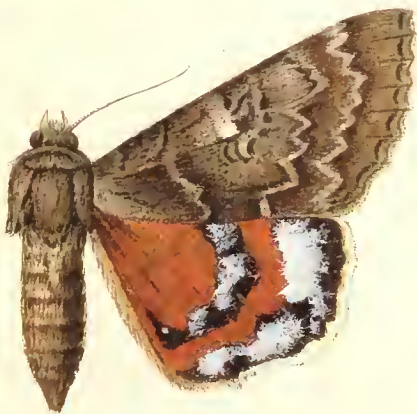


unijuga

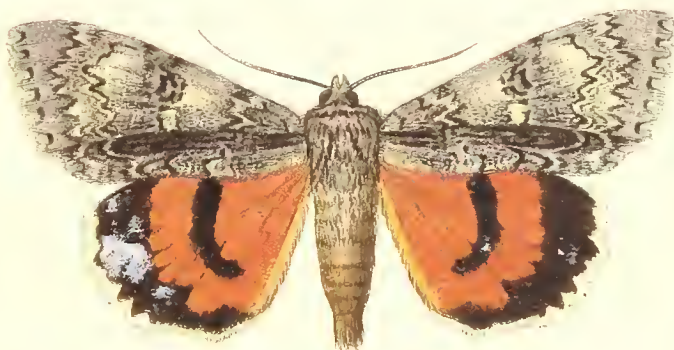


fletcheri

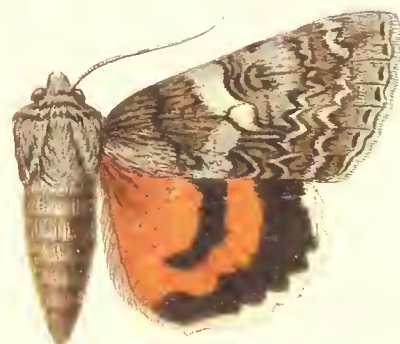
e



agatha



semirelicta



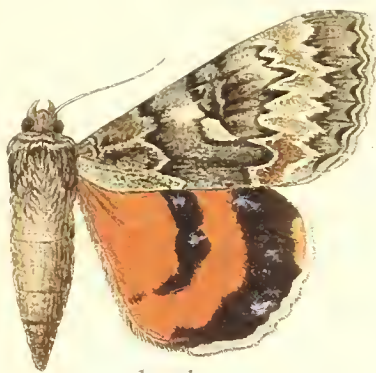
beaniana



a



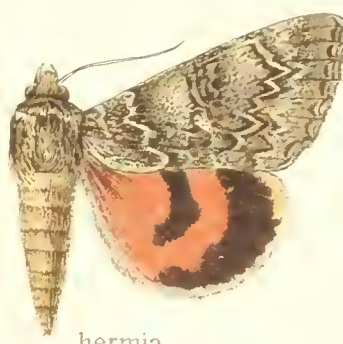
grotiana



nevadensis



montana

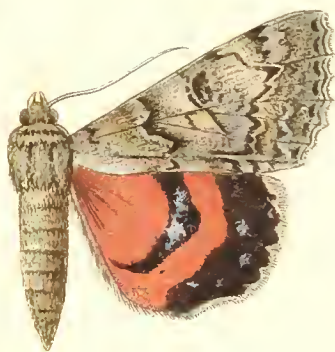


hermia

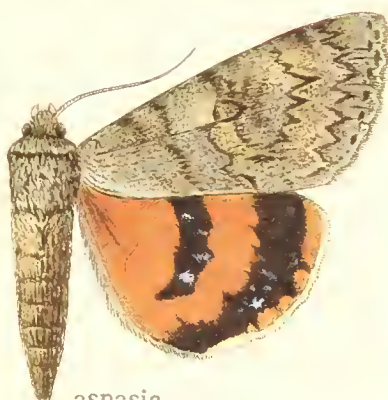
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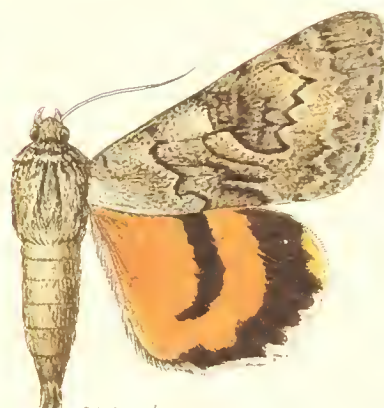
briseis



albida



aspasia

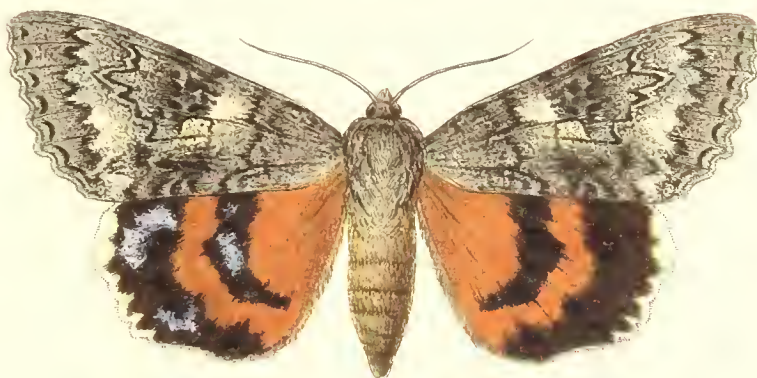


augusta

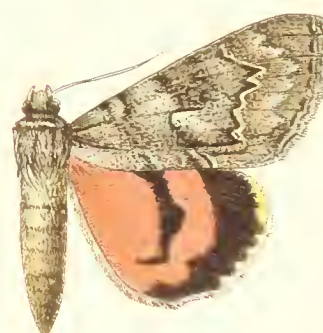
c



sara

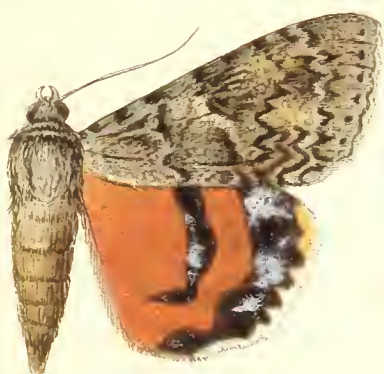


meskei

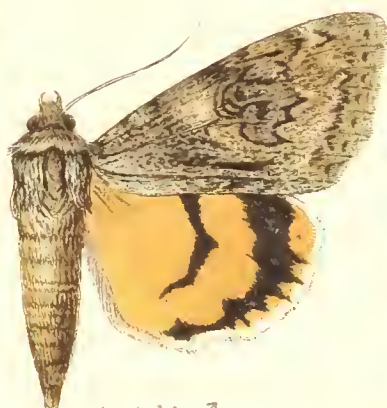


jessica

d



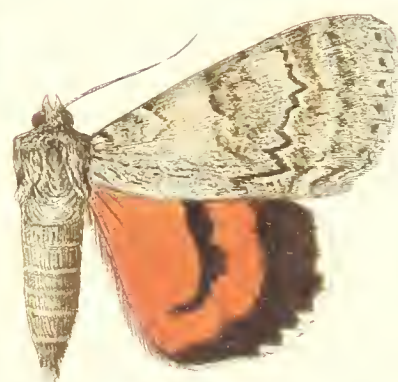
stretchi ♀



stretchi ♂

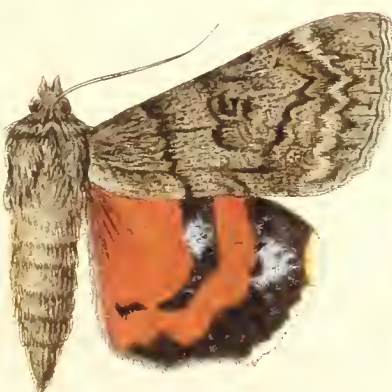


sierrae



hippolyta

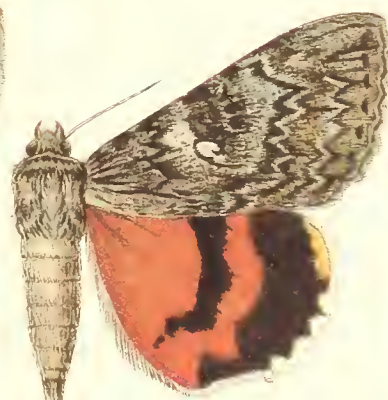
e



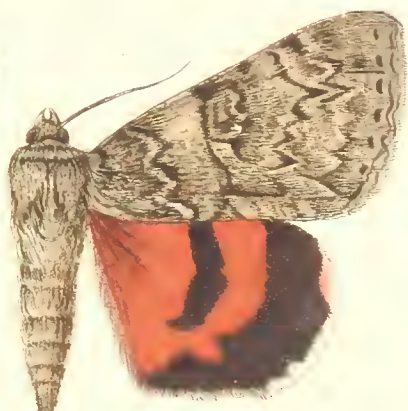
junctura ♂



junctura ♀



arizonae



babayaga



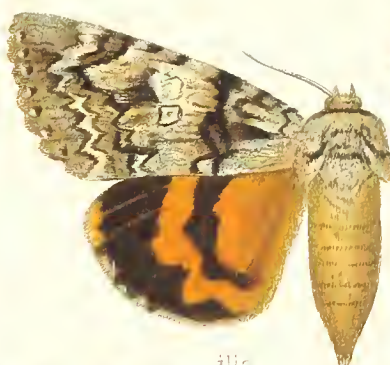
a



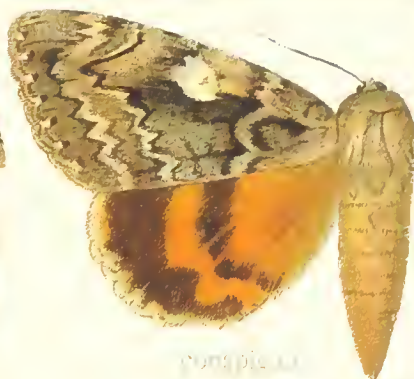
umbrosa



confusa

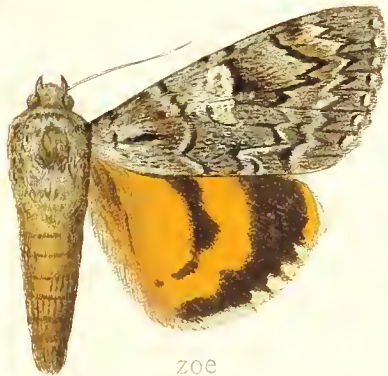


illa

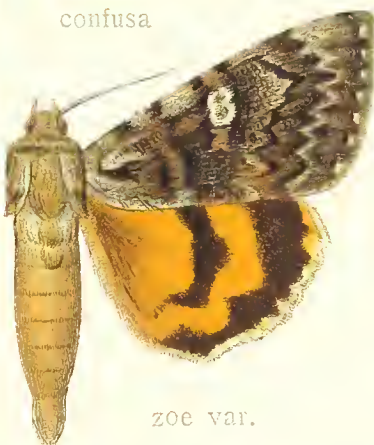


conspicua

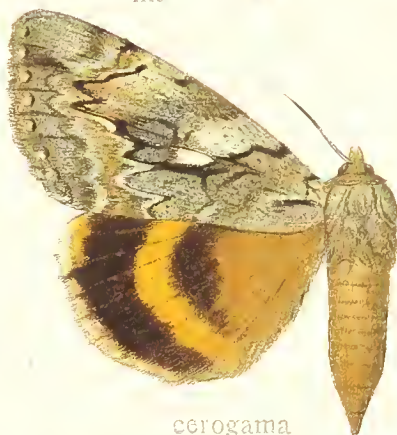
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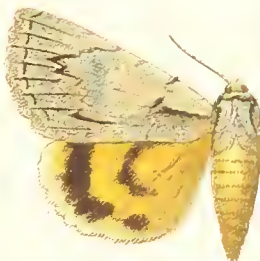
zoe



zoe var.



cerogama



clintoni

c



gracilis



trans-
sordida



sordida

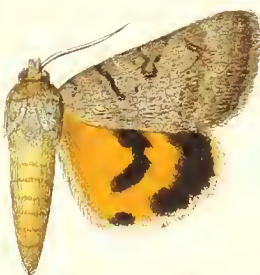


amestris

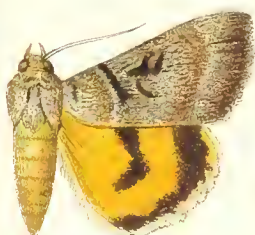


vestio-ti

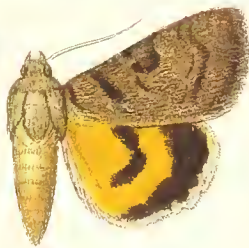
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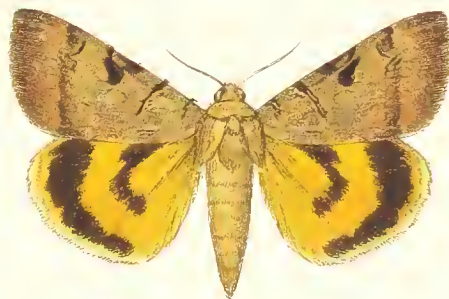
abbreviatella



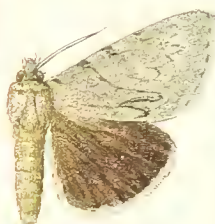
whitneyi



obscura

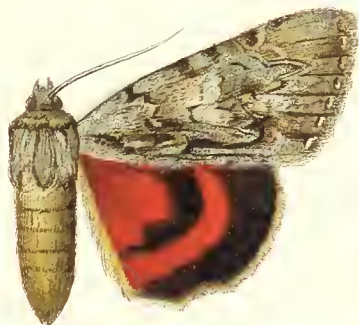


nuptialis

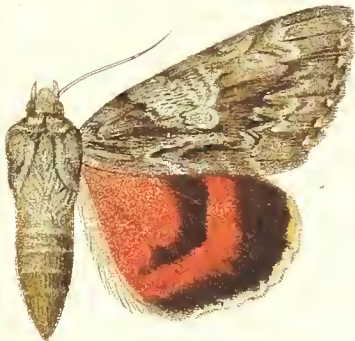


miranda

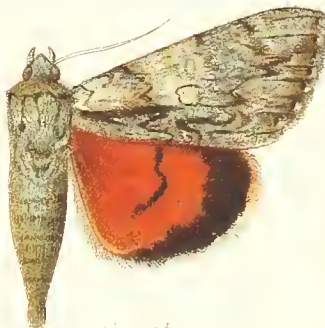
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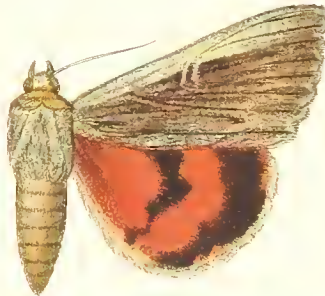
coccinara



circe

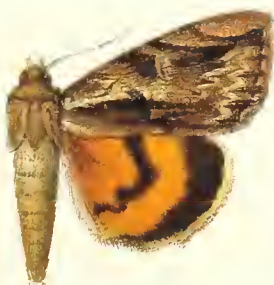


sinuata



herodias

f



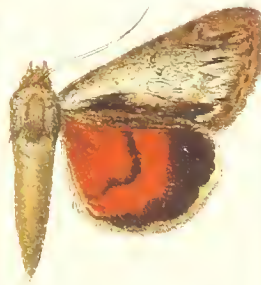
ultronia



lucinda



adriana



celia































ZALEMATIGRAMMA

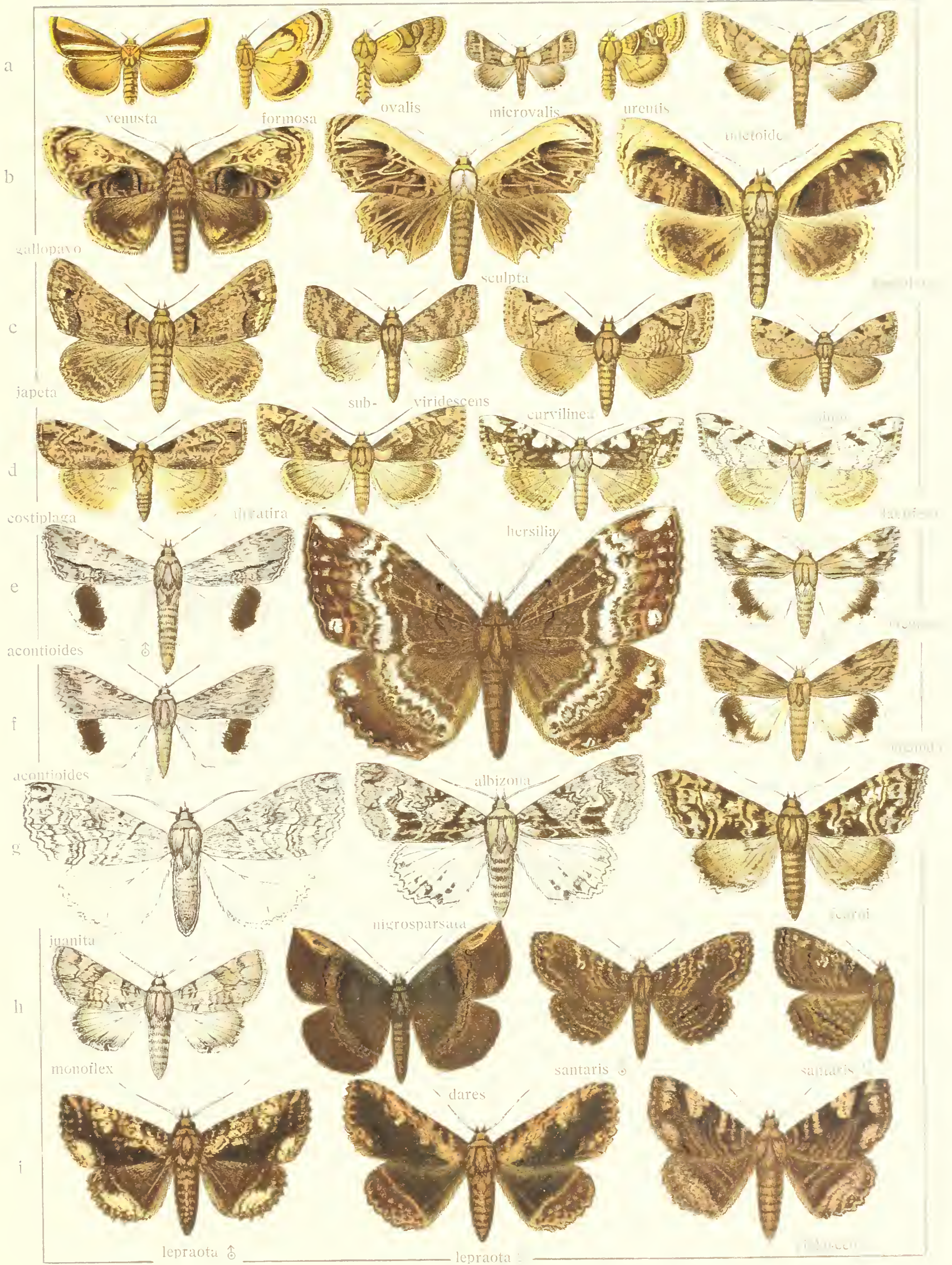




CALLIPTILISIA HYALINATA







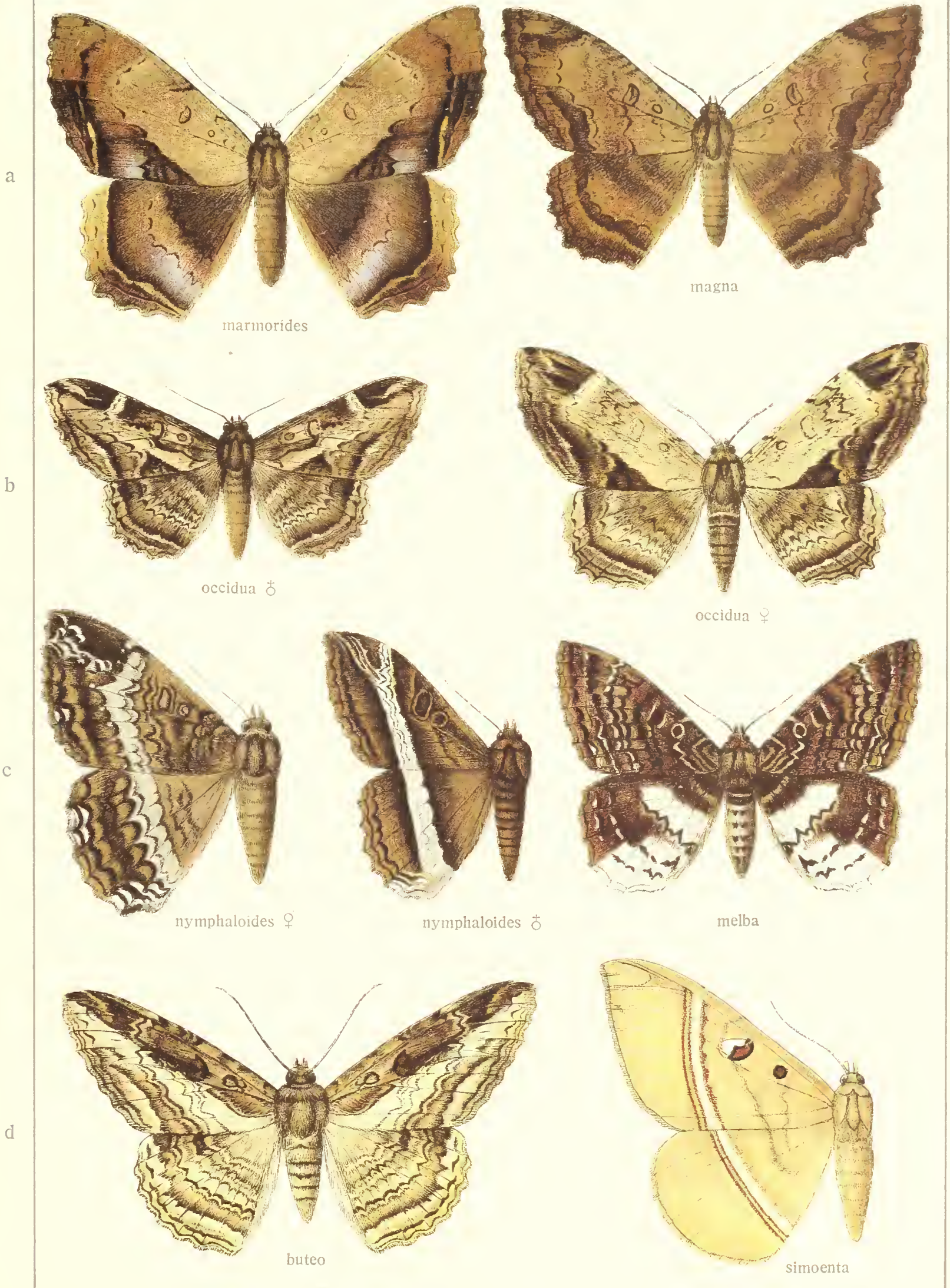




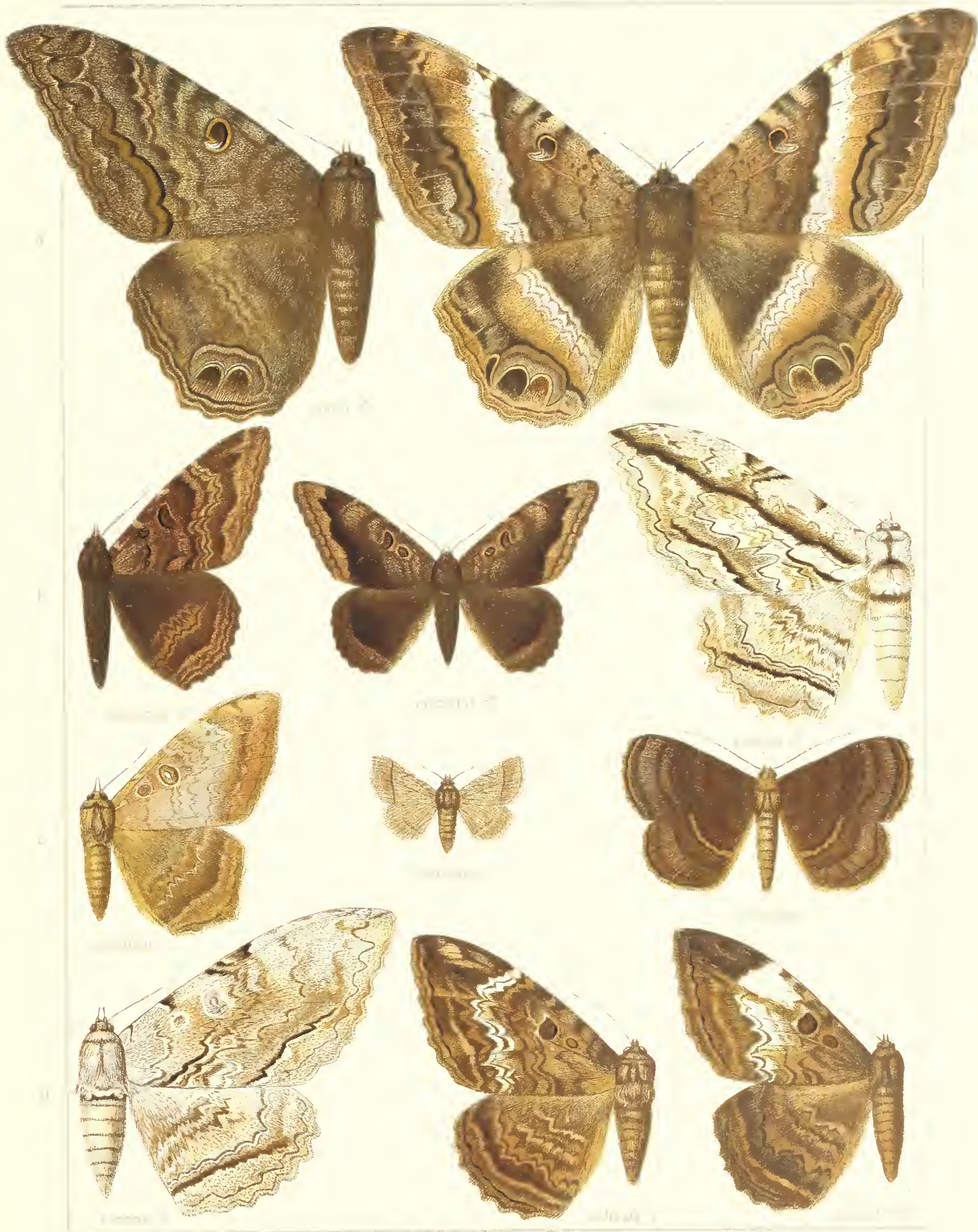


















a



buteo ♂



buteo ♀

b



vultura ♂



vultura ♀

c



tiasa ♂

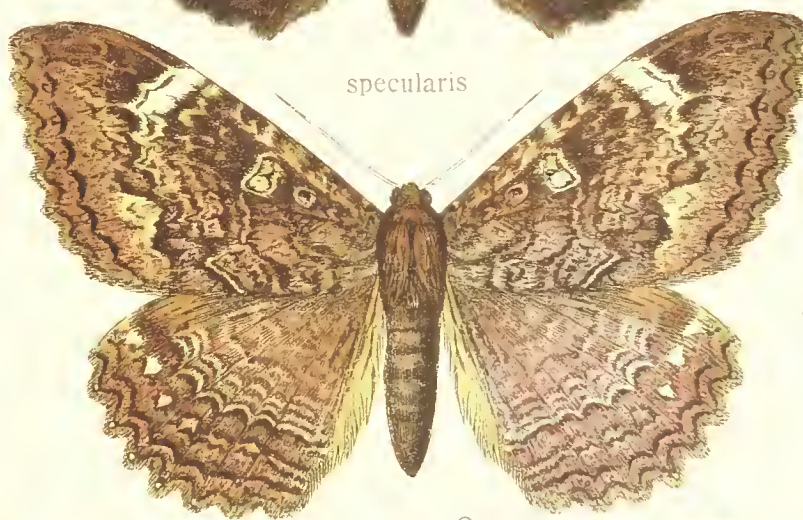


specularis

d

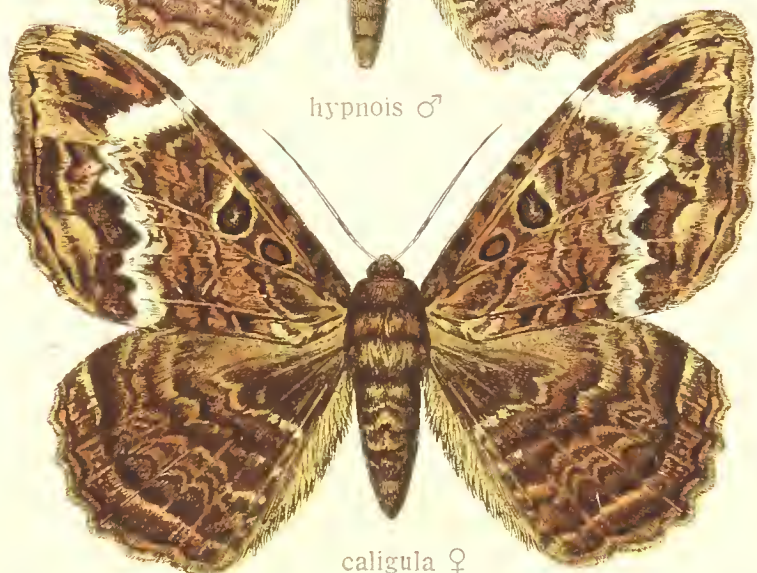


hypnois ♂



hypnois ♀

e



caligula ♀



caligula ♂

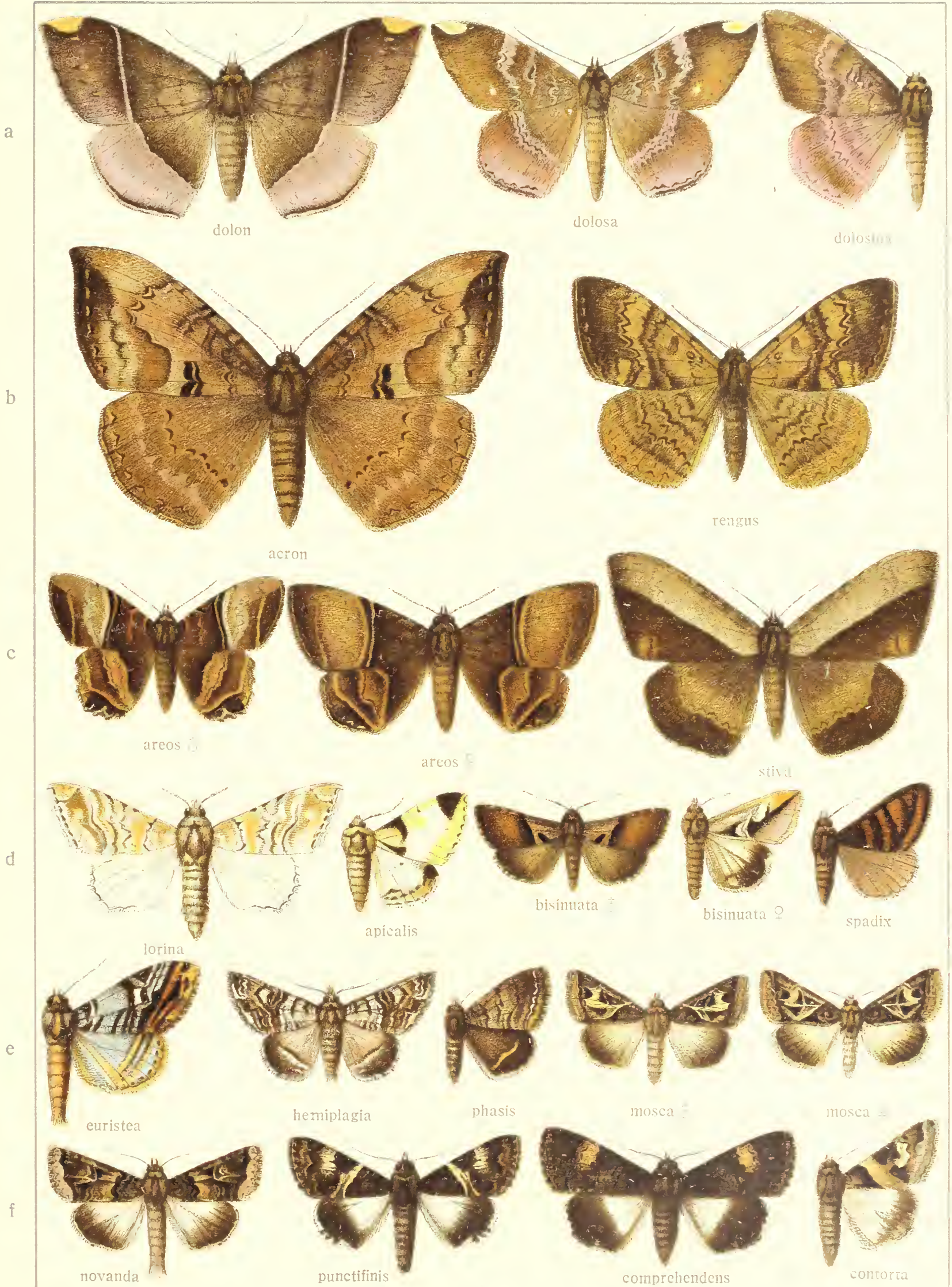


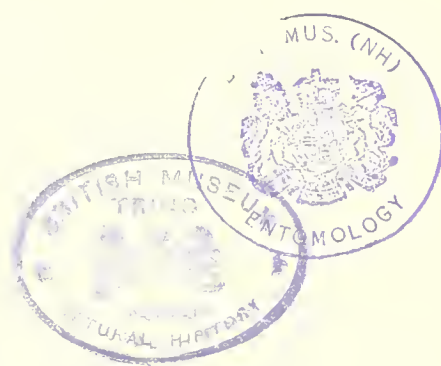


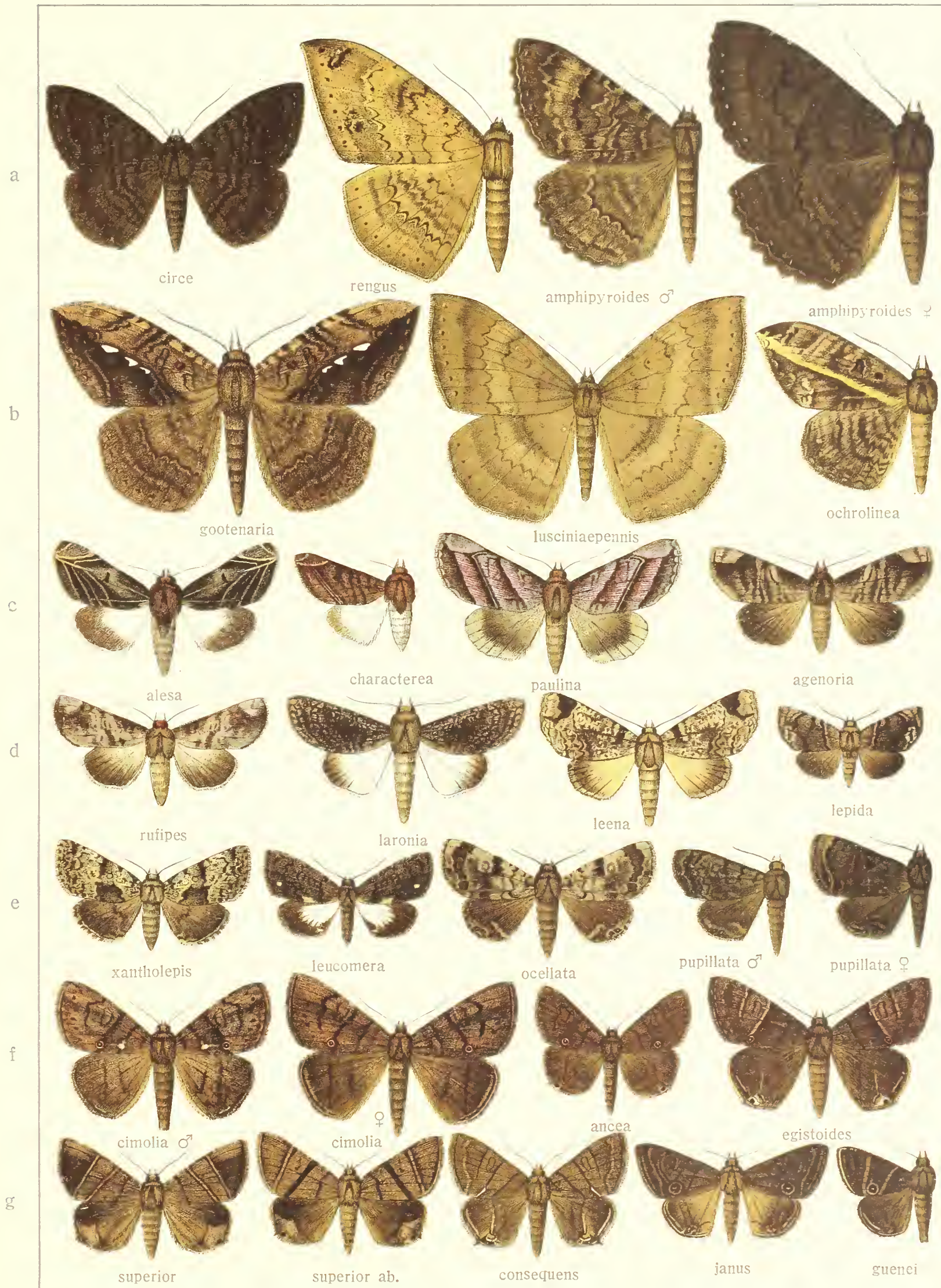














a



ilyrias

ilyrias ab.

stigmasticta

schedoglauca

glaucopasa

chloris

gynodonta

b



geminata

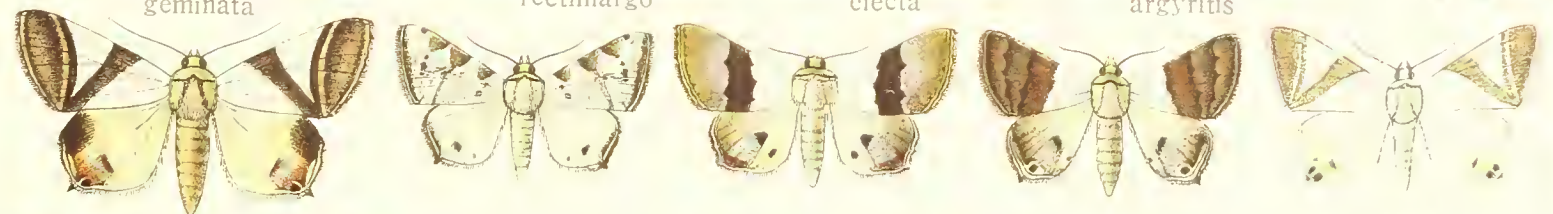
rectimargo

electa

argyritis

suppura

c



dominicata

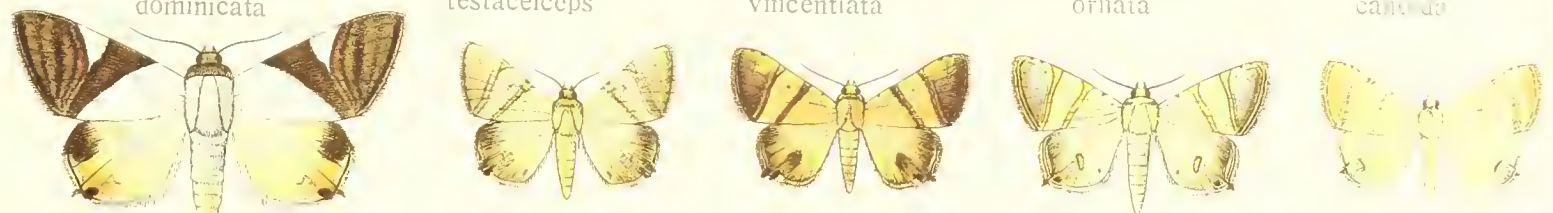
testaceiceps

vincentiata

ornata

candida

d



fortissima

julianata

julianata ab.

aglaura

micea

e



alabastaria

detracta

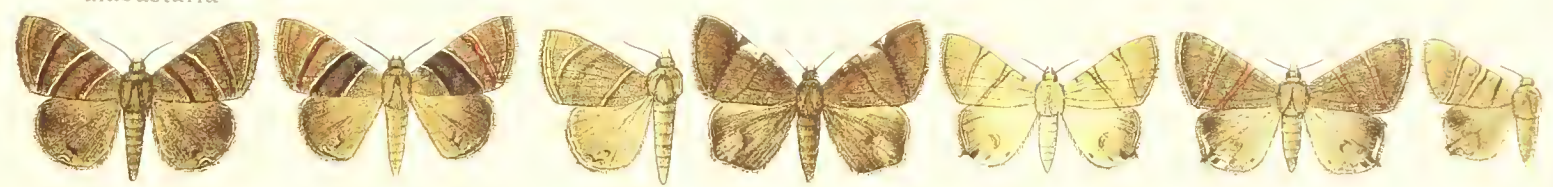
hermura

formosa

corinna

stella

f



inclyta

inclyta ab.

sabina

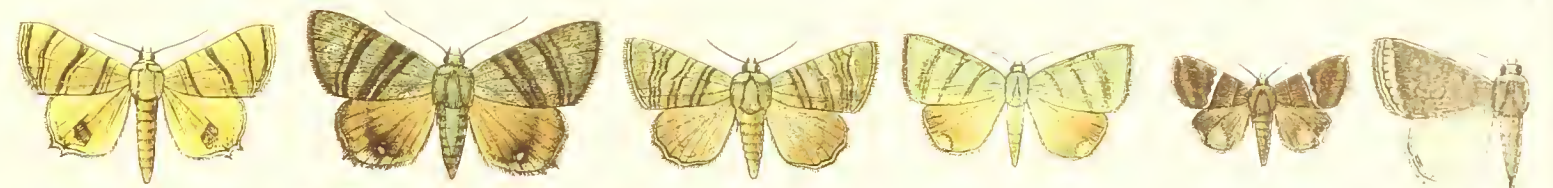
ezra

juncida

nabis

juncida ab.

g



emilia

reticulata

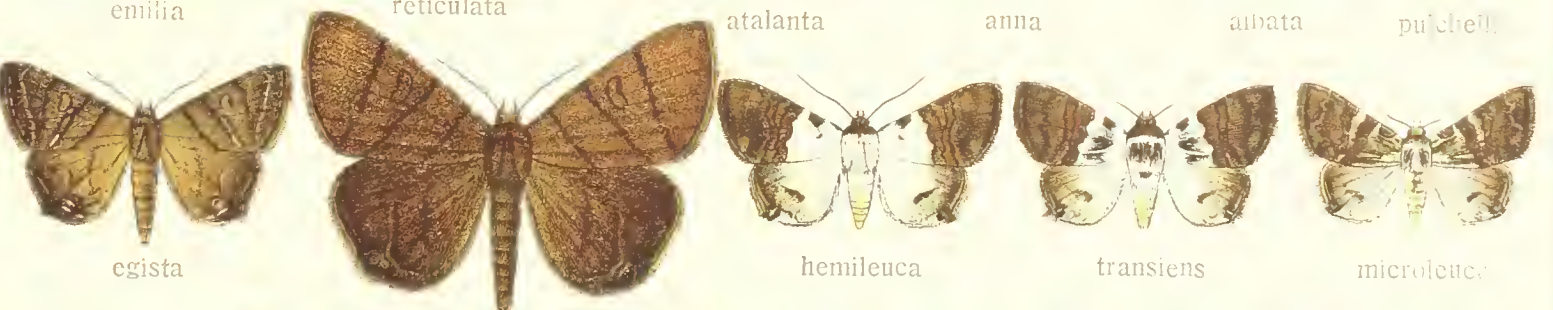
atalanta

anna

albata

pulchella

h



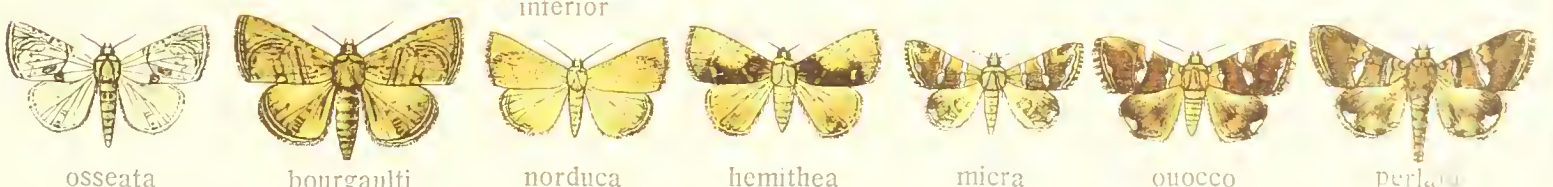
egista

hemileuca

transiens

microleuca

i



osseata

bourgaulti

norduca

hemithea

micra

ouocco

perlata



